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WORK VALUES OF THE HANDICAPPED.

BY- KINNANE, JOHN F. SUZIEDELIS, ANTANAS
CATHOLIC UNIV. OF AMERICA, WASHINGTON, D.C.

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DESCRIPTORS- *PHYSICALLY HANDICAPPED, *WORK ATTITUDES, SOCIAL PSYCHOLOGY, COMPARATIVE ANALYSIS, *MOTIVATION, VOCATIONAL ADJUSTMENT, *PERSONAL VALUES, CONTROL GROUPS, SEX (CHARACTERISTICS), AGE, CEREBRAL PALSY, EMOTIONALLY DISTURBED, AMPUTEES, DEAF, TEST CONSTRUCTION, EDUCATIONAL BACKGROUND,

TO DETERMINE THE WORK VALUES OF THE PHYSICALLY HANDICAPPED, A WORK MOTIVATION SCHEDULE WAS DEVELOPED AND ADMINISTERED TO 200 NORMAL WHITE MEN AND 200 WOMEN OF REPRESENTATIVE NATIONAL AVERAGE AGE AND EDUCATION AND TO CEREBRAL PALSIED, DEAF, 63 RECENT AMPUTEES FROM THE VIETNAM WAR AND NEURO-PSYCHIATRIC PATIENTS. COMPARISON OF THE TWO GROUPS SHOWED SIGNIFICANT DIFFERENCES IN WORK MOTIVATION WITH VARIANT SOCIAL ROLES OF THE HANDICAPPED CAUSING THE VARIATION. CHOICE OF OCCUPATIONAL ROLE WAS SIGNIFICANTLY RELATED TO THE PERCEIVED SOCIAL ROLE IN THE WORLD OF WORK. A RELATIONSHIP EXISTED BETWEEN THE NATURE OF A PARTICULAR HANDICAP AND THE PSYCHOLOGICAL MEANINGS OF THE HANDICAP AS SOURCES OF INTERPERSONAL ANXIETY AND CONCERN. FOR EXAMPLE, FEELINGS OF RECENT AMPUTEES FROM VIETNAM OF BEING MARGINAL SOCIALLY WHILE IN THE HOSPITAL AND THEIR CONCERN OF BEING SIGNIFICANT TO OTHERS AGAIN AFTER DISCHARGE MAY HAVE ACCOUNTED FOR ELEVATED SCORES. THE HIGHLY VARIANT SOCIAL ROLE OF THE NEURO-PSYCHIATRIC GROUP WAS REFLECTED IN HIGHLY VARIANT VALUE-ORIENTATION. THE DEAF VALUED WORK MORE HIGHLY BECAUSE IT PROVIDED AN OPPORTUNITY TO COMMUNICATE WITH OTHERS. THUS INTERPERSONAL CONCERNS SIGNIFICANTLY AFFECTED VALUATION OF WORK IN THAT THE HANDICAPPED WERE SENSITIZED TO THOSE INTERPERSONAL ASPECTS OF WORK WHICH CAUSED THEM CONCERN. FURTHER STUDY IS NEEDED TO RELATE THE SOCIOPSYCHOLOGICAL ADJUSTMENT OF VARIOUS GROUPS OF THE PHYSICALLY HANDICAPPED TO PATTERNS OF WORK VALUATION. PRACTICAL APPLICATION OF THE STUDY IS TO PROVIDE HANDICAPPED WORKERS WITH A CLEARER UNDERSTANDING OF THE SATISFACTION THEY SEEK FROM WORK, SO THAT OCCUPATIONAL CHOICE CAN BE MORE IN LINE WITH VALUES. THE APPENDIX INCLUDES THE WORK MOTIVATION SCHEDULE, SURVEY STATISTICS IN TABULAR FORM, AND REFERENCES. (PP)

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WORK VALUES OF THE HANDICAPPED

Prepared by:

John F. Kinnane, Ph.D.
Associate Professor of Psychology

Antanas Suziedelis, Ph.D.
Associate Professor of Psychology

The Catholic University of America

October 31, 1966

This investigation was supported, in part by a research grant, number RD-1475-P-65-C1, from the Vocational Rehabilitation Administration, Department of Health, Education and Welfare, Washington, D.C. 20201

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Foreword

This is a general report on a study carried out over a two-year period at the Catholic University of America under a grant No. RD-1475-P-65-C1 from the Office of Vocational Rehabilitation.

The responsibility for planning, execution and analysis of the research has been shared equally by the two investigators. In order to facilitate inquiry on specific points made in the report, however, it may be useful to note that Chapters I, II and VI were written by J.F.K. and Chapters III, IV and V by A.S.

The authors are indebted to those colleagues, students and associates who at one time or another have aided in the execution of this study. Specific acknowledgements are made in the report itself.

J.F.K.
A.S.

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Chapter I

INTRODUCTION

This study was designed to explore the work values of the physically handicapped. That there is a need for such a study has been stressed frequently. The work group concerned with career development at the 1960 Miami Conference (Lofquist, 1960, pp. 66-67) suggested seven areas where "specific research is sorely needed." The first and the last of these seven areas relate to satisfactions derived from work and the development of a measure of work values:

> "1. Study satisfaction derived from work of groups that had made similar career choices but on the basis of quite different limiting factors or sets of limits. Here it would seem that study of physically handicapped groups as compared with non-handicapped groups might provide some of the suggested differing sets of limits.
>
> "7. The development of more adequate measures of 'values'. It is felt that such instruments would be extremely useful in providing individuals with a clearer understanding of their values and would allow them to make selection (in the whole development process) in line with their values."

The conference on "Research Needs in the Vocational Rehabilitation of the Deaf," conducted at Gallaudet College in 1960, listed four priorities for research of which one was to develop measures of vocational motivation (Doctor, 1960, pp. 335-370).

The importance of values in vocational development, choice, and adjustment is stressed in the literature. Ginzberg (1951) maintains that an "individual will not make an effective occupational choice unless he has support from his value scheme. Super (1957) perceives values as one of the most crucial variables in vocational development: "Work satisfactions depend upon the extent to which the individual can find adequate outlets in his job for his abilities, interests, values and personality traits." He further stresses the point that values "permeate all aspects of life, they concern life's goals, and in some instances they seem to be closely related to needs and drives." The role of values in the general and vocational adjustment of the handicapped has been described by Wright (1960, Chap.5).

In recent research and theory in vocational development, the concept of value is the object of increasingly intensive study. In a private communication to the present investigators, Super describes the final development of his Work Values Inventory. This measure of work values represents the end product of many years of research in the Career Pattern Study (Super, 1962). Katzell (Borrow, 1964, Chap. 15) reviews certain aspects of research and theory in work value orientation, and presents stimulating ideas of his own in the general area of job satisfaction. Wrenn's review of "Human Values and Work in Americal Life" (Borrow, 1964 Chap. 2) provides a broad, historical perspective for a consideration of the meaning of work in the individual's daily life. The Minnesota Studies in Vocational Rehbilitation (Bulletins 40 & 41, 1964) attempts to define disability in terms of its effect on work adjustment, and in particular on the personal satisfaction of the disabled worker.

The concept of value

Despite the obvious importance of the concept of value orientation in current psychological research and theory (cf. Schofield, 1960), little thought has been given to a more clearcut definition of value as distinct, for example, from such constructs as interest, need, and drive. Most students of preferential behavior agree that values do exist, and that the essential task is to define what these values are. Here the agreement appears to end, and approaches to a definition of value are as diverse as they are numerous. While no adequate attempt can be made in this context to review general theories of value, it would seem necessary to note some major definitions of value and to comment on the major roots of disagreement.

Many theorists, be they in psychology, anthropology, economics, or philosophy, distinguish values as intrinsic - valuable in themselves - and instrumental - means to an end. Intrinsic values are generally the focal point of discussion since they are perceived as of real significance to the individual. Many, on the other hand, deny that intrinsic values exist. Perhaps the main cause of disagreement is the failure to make what Robin Williams (Barrett, 1961, p. 58) has called "the highly consequential distinction" between realities that are valued and realities that are values. The empirical approach operationally admits of no distinction; the philosopher on the other hand, is concerned with the twofold exploration of first, the sources of metaphysical, or actual human values, and second, the root of personal or psychological human values. The philosopher and the empiricist are both concerned with the basic reasons why the individual values the things that he does and in the preferential order that he does, but the philosopher insists on the distinction between realities that are human values and realities that man values.

The empirical approach is only concerned with those realities that individuals actually value. No a priori standard of value is assumed for the purpose of research; hypotheses are formulated and verified by perceived facts. Agreement on approach, however, does not imply agreement in definition, as the following selected examples indicate. "A value is the measure of satisfaction of human want" (Maslow, 1959, p. 38). "Generically considered, value may be defined as the assuagement of desire" (Parker, 1957, p. 4). "Values are felt desires, and value judgments are ideas or hypotheses about what we need to satisfy or harmonize these desires". To Kluckhohn (Barrett, 1961, p. 18) value is a "selective orientation toward experience, implying deep commitment or repudiation, which influences the ordering of 'choices' between possible alternatives in action". In a further attempt at definition, he perceives values as "images formulating positive or negative commitments, a set of hierarchically ordered prescriptions and proscriptions" (Barrett, 1961, p. 20). Value for Pepper (1941, p. 77) is, in simplest terms, "anything good or bad", and in more complex terms, "all selections by a selective system that are relevant to human decisions and all such natural norms" (1941, pp. 690-691).

The concept of value in vocational development

The approach of the investigators in this study and in previous studies (i.e., the attempt to measure work values and valuations in mathematical terms), might best be described as a middle course between an empirical and a philosophical approach. Whilst accepting a priori standards of value, they would agree with Charles Morris that the most productive approach is to define value theory as "the science of preferential behavior" (1956, p. 12). Morris insists that the mathematical measurement of factors involved in the individual's preferential behavior will provide insights into his valuation of reality. Although attempting to formulate a value theory on an empirical basis, he states that science cannot be the total determinant of human values, and that such a theory would be a limited one.

More specifically, the concept of value in the present study is closest to the "value orientation" formulation of Kluckhohn and Strodtbeck (1961, p. 4):

> "Value orientations are complex but definitely patterned (rank ordered) principles, resulting from the transactional interplay of three analytically distinguishable elements of the evaluative process -- the cognitive, the affective, and the directive elements -- which give order and direction to the ever-flowing stream of human acts and thoughts as these relate to the solution of 'common human' problems".

Of the essence is the directive aspect of the value-orientation concept in vocational development. Values are general, stable, cognitive-affective, motivational predispositions of a person to the work environment. In selecting items to measure work valuation, only those are chosen which represent this broad, directive, concept of values. Item content exclude all reference to specific activities of occupational tasks, and call for a more basic self-appraisal of the individual's "selective orientation toward experience, implying deep commitment or repudiation, which influences the ordering of 'choices' between possible alternatives in action" (Barrett, 1961, p. 18).

Values and interests

Because of the confusion of the concepts of "value" and "interest" in the literature of vocational development, it would seem necessary to distinguish between them (Kinnane & Suziedelis 1962). Darley and Hagenah (1955, p. 191), while recognizing the part which values play in occupational choice, fail to make an adequate distinction: "It is our major thesis now that occupational choice and measured occupational interests reflect, in the vocabulary of the world of work, the value systems, the needs, and the motivations of individuals." Myers (1966), in a review of recent research in Counseling Psychology, classifies the value research of one of the present investigators under the heading of "interests", and in his description of the research substitutes the term "interest" for that of "value". Super and associates (1957), in striving for a distinctive definition of value, still operationally confound the two concepts: "Values closely resemble interests, and tests designed to measure them can be used interchangeably. Values, however, seem to represent something more basic than interests. They permeate all aspects of life, they concern life's goals, and in some instances, they seem to be closely related to needs and drives."

Interests, particularly inventoried interests, represent discrete, decision making responses to a number of specific activities which (on the Strong Vocational Interest Blank, for example) are made meaningful by empirical grouping. They appear to be only stable as grouped, since preferences for as many as 125 items of Strong's 400 were found to have changed over a period of time (Super, 1957, p. 379). It can be deduced from this that inventoried interests are much more closely linked to specific environmental situations; the very task on an inventory of interests is to appraise the situation in relation to oneself without the depth of self-scrutiny required on a personality inventory. The great majority of the items of Strong's inventory call for specific information about occupations, school subjects, and an acquaintance with periodicals, personalities, parliamentary procedure, etc. Quite apart from the personality of the respondent, therefore, the kind of information he possesses might determine his response. While this does not impair the empirical validity of the inventory, it makes it difficult to evaluate the underlying motivation for making these preferences.

The work-value items, while couched in occupational terms, do not require specific information as does the Strong, V.I.B. but rather reflect the overall evaluative orientation of the individual, within the limits of his self-awareness, to life and work in general. This distinction - logical, molar, general, motivational, self-reflective, directive on the one hand, and the empirical, molecular, specific, activity-object oriented, on the other - appears to establish a sharp distinction between work-values and inventoried interests in the general context of the personality determinants of vocational decision-making.

The description and classification of work values

If work values are to be studied, then adequate measures must be developed, and a more clearcut knowledge of the structure of these values must be achieved. The classification of values as intrinsic or extrinsic (instrumental) has already been noted. This essentially involves the distinction between values that are inherent in the activity itself, and those which are the concomitants of participating in the activity. Ginzberg et al. (1951, p. 217) theorized that work satisfactions fall into three categories: rewards (monetary and prestige), concomitants (social and environmental), and intrinsic satisfactions (pleasure in the activity and in the accomplishment of specific ends). Darley and Hagenah (1955) confine their discussion of values to the intrinsic - extrinsic dichotomy. Rosenberg (1957, pp. 13-16) classified the values of college students as self-expressive (intrinsic), people, and extrinsic reward types of values. Super (1962, p. 232), on the basis of his work with the Work Values Inventory, classified values into the following fifteen areas on the basis of observation (rather than on such an empirical basis as factor analysis):

Intrinsic

1. Altruism
2. Creativity
3. Independence
4. Intellectual stimulation
5. Esthetics
6. Achievement
7. Management

Extrinsic: Rewards

Way of life
Security
Prestige
Economic returns

Extrinsic: Concomitants

Surroundings
Associates
Supervisory relations
Variety

On the basis of empirical research on the "intrinsic - rewards - concomitants trichotomy", Super concluded (1962, p. 233):

> "It may perhaps be meaningful, from a philosophical standpoint, to think in terms of intrinsic, reward, and concomitant values:

the logic of the classification still seems good. But it is not helpful to do so when studying the structure of values in human subjects, for people who tend to score high on one intrinsic value, e.g., creativity, do not tend to score high on all other intrinsic values, e.g., mastery."

O'Connor and Kinnane (1961) factor analyzed the items of the Work Values Inventory and identified six factors, juxtaposed here with Super's (1962) classification:

A. Material Success (prestige, security, economic returns)
B. Altruism (social, creativity, management, supervisory relations)
C. Conditions and Associates (surroundings, associates, independence)
D. Heuristic Creative (intellectual stimulation, creativity, esthetic)
E. Achievement Prestige (achievement, prestige, independence, way of life)
F. Independence, Variety (independence, variety, way of life)

Suziedelis and Kinnane (1962) devised new value items which were correlated into these factors and an inventory of 89 items was developed. On the basis of research with this instrument, considerable knowledge was accumulated regarding the definition and structure of work values. Martin (1963), for example, using this inventory, submitted the responses of junior and senior college women to factor analysis and isolated ten relatively independent factors: social welfare, supervision, creativity, variety, accomplishment, freedom, economic-security, pleasant associates, prestige, pleasant surroundings.

A new instrument, the Work Motivation Schedule, which resulted from this research, has been used by the present investigators to further their knowledge of the structure of work values. Some of the findings, relevant to the present study will be discussed in the body of the report. The initial task in the present study of the physically handicapped groups was to refine the scales of the Work Motivation Schedule so as to make it applicable to the handicapped and to establish norms adequate for comparison purposes on "normal" samples of men and women.

Psychological, social, and biological determinants of work-value orientation

With a clearer understanding of the structure of work values, and with more adequate measuring devices, research conducted so far by the investigators has concentrated on the more important social and psychological determinants of the work-value orientation of the individual. Taking Super's (1957) development approach to vocational choice, Kinnane and Pable (1962) sought to determine the influence of family background on the development of the work values of eleventh grade boys. The study tended to confirm the hypothesis that family influences are critical in the development of the individual's value-orientation to work. This conclusion was strengthened by the fact that, with the exception of the heuristic-creative type, values were found to be not significantly related to either general intelligence or school curriculum.

In a similar study, involving an examination of parental influences on the values of women, Kinnane and Bannon (1964) found that perceived parental influence was highly related to the father's occupational level; that fathers who are engaged in professional work and whose level of education and training is superior to that of the mother exert a greater influence on the female child but she does not appear to introject the father's work-value orientation, rather, it is the father's idealized goals for the daughter that are internalized. Girls who identify with their mothers more often come from skilled or unskilled level homes.

Martin (1963) found significant differences between the work-value orientations of career-oriented women and those who had marriage and family primarily in mind.

Two studies in particular helped generate the present interest in the values of the physically handicapped, involving as it does a special focus on the biological determinants of work-value orientation. In a deduction from "self-theory", Kinnane and Gaubinger (1963) explored the relationship between general "life" values and work values. Results provided support for the postulate that there is a consistency, a unitary or common factor, in value development. If, as Super (1957) states, vocational choice is a life-long attempt to implement a changing self-image in a changing world of work, and if values form a significant part of that concept, then it may be expected that the value systems of physically handicapped individuals, particularly as they are related to valuing work, may influence both occupational and vocational choice. Over and above this, the work-value system may affect the way in which the handicapped individual attempts to fulfill his social role, as a minority member in the society of the non-handicapped majority.

The second study (Kinnane and Suziedelis, 1964) was directly concerned with the social roles of selected groups of the physically handicapped. A consideration of the findings of the study in relation to extant literature on the psychology of the physically handicapped suggested that it would be fruitful to explore further the psychological meanings of the physical handicapped: 1. at various life stages and critical periods of development; 2. in the light of "justifiable" vs. excessive dependency and 3. in relation to the degree of subjects' identification with a sub-culture of the handicapped as contrasted to regular contact with the non-handicapped majority.

Work-value orientations of the physically handicapped

The present research is predicated on two major theoretical propositions. First, that physical disability is a phenotypic (surface) classification, and that the situational factors of the illness or handicap produce a unique attendant alteration of the individual's pre-morbid social-psychological adjustment (his self-concept, his interpersonal relations). Implicit in this statement is the assumption that a physical disability manifests its psychological effects through social rather than biological mechanisms, in a relationship involving primarily the cognitive aspects of the patient's reaction to his altered life situation. Second, as a deduction from "self-theory", there exists a consistency between general "life" values and particular values, as in work.

The research problem becomes essentially one of relating dominant and variant social roles to dominant and variant value orientations. Most recent theory and research on the somatopsychological relation between disability and behavior, focuses on the variant social role of the handicapped, as compared with the dominant social norms of the non-handicapped majority. Wright (1960) develops her concept on "inferior status position" in stressing the fact that much of the restriction of a physical handicap has its source in socially derogatory attitudes. Self-devaluation as felt by the disabled person is manifested variously, and in the occupational area may involve a perceived loss of competence. Cowen, Unterberg and Verrillo (1956) found evidence, for example, that negative attitudes toward blindness correlated significantly with anti-minority, anti-Negro, pro-authoritarian attitudes. Lewin's (1935) concept of "marginality" contributes understanding to the overlapping roles of the disabled person, who finds himself subject to the behavioral mores of the disabled group, and conflictingly under pressure to be like the "normal" non-handicapped majority. Wright (1960), Dembo et al. (1952, 1956) invoke the concept of "spread", by which the effects of disability are perceived as present beyond the confines of atypical physique into diverse areas of life, particularly the interpersonal.

The variant nature of the social role of the handicapped would appear to have considerable relevance for variations in their life-value orientations, and thus in their work-value orientations since it is postulated that the choice of an occupational role is an attempt to implement a perceived social role in the world of work. Thus, for example, the feelings of the handicapped individual of being inferior or marginal socially may significantly affect his perception of an occupation on the basis of the potential of that occupation or work situation to satisfy his heightened need for affiliation. Again his feelings of dependency, which Cowan (Lofquist, 1960) considers to be central to the entire field of disability, may alter his valuation of work in that he would primarily seek satisfaction of dependency needs in the work situation. Thus the general hypothesis of the study is that there are significant differences in patterns of work-value orientation between the handicapped minority and the "normal", non-handicapped majority.

Chapter II

SUBJECTS OF THE STUDY

From the brief review in this context and a more intensive review in a previous study (Kinnane and Suziedelis, 1964) in the area of research and theory on the social roles of the physically handicapped, four groups were selected: cerebral palsied, deaf, amputees, and neuro-psychiatric patients. These groups were selected to provide the widest possible basis for the systematic study of work-value orientation as a mediation between disability and vocational behaviour, i.e. potential for wide variation in (a) the handicapping effects of the disability itself; (b) individual reactions to the disability; (c) the attitudes of society; (d) the disabled individual's reactions to these social attitudes.

The cerebral palsied

Through the cooperation of the United Cerebral Palsy of New York City, Inc., (Dr. Martin E. McCavitt, Ed.D., Director) adequate samples of cerebral palsied men and women were obtained. The handicapping effects of disability (both physical and neural pathology) in the groups selected were considered most severe. Subjects were obtained from an ongoing research project, the Brownsville Adult Developmental-Training Program. The advice of Dr. Leonard Diller, consultant to the program, and of Dr. Thelma Manjos were invaluable in obtaining adequate measures of relevant control data. Data on age, level of education, whether study was done at home or at school, employment record, verbal IQ, chief source of economic support were available in the records of the Brownsville program. Also available were ratings of ability to travel independently, understandability of speech, eye-hand coordination, social isolation (the extent of social activities), degree of perceptual difficulty, and reading ability. These ratings were generally made on a three-point scale (e.g. poor, moderate, good) by staff members from close personal knowledge of the subject and from extensive records. A full report of this study is available (McCavitt, 1966).

Similar information and research data were obtained on cerebral palsied subjects at The Institute for the Crippled and Disabled, New York City through the cooperation of Dr. Myron Koltuv, Director of Research, and of Mr. Bernard Rosenberg, Director of The Vocational Rehabilitation Service.

The average age of the cerebral palsied men is 28.7 years, with a range of 17 to 58 years. The average level of education is grade 11, range 5th to 14th grade. Of the 23 in the group, 4 are currently unemployed, 4 are employed, and 15 are trainees. Ratings of social isolation (the extent to which the subject participated in social activities) indicate that 7 are active, 16 inactive. Eye-hand coordination (staff ratings) is rated as poor in the case of 12 subjects, moderate in 11, with the rating "good" never used. Ability to travel independently is rated as "independent" in all cases except two. Intelligibility of speech (staff ratings) is rated as poor in the case of 5 subjects, moderate in 9 and good in 9. Seventeen subjects were able to complete The Work Motivation Schedule without any help, but in 6 cases considerable help was necessary in marking the answer sheet and in reading and understanding the items. This help was given on an individual basis by a psychologist on the staff of the study to ensure adherence to the exact interpretative significance intended for the items.

Seventeen cerebral palsied women were tested, average age 27.4 years (range 6 to 13). Of the 17, 2 are employed, 8 unemployed and 7 trainees. Social isolation ratings indicate 7 are "active", 10 "inactive". In 5 subjects, eye-hand coordination is rated "poor", "moderate" in 8 subjects, and "good" in 4. Speech intelligibility is "poor" in 4 subjects, "moderate" in 3, and "good" in 10. Travel ability is rated as "independent" for 9 subjects, "dependent" for 8.

The amputees

The second group, consisting of 63 recent amputees from the Vietnam War was selected in that such a group was considered to be socially and psychologically very different from the other three disability groups on the extent of actual disablement, the reactions of the servicemen to the disability, societal attitudes to the wounded veteran, and the veteran's perception of these attitudes. Studies such as those of Wittkower (1947) and Randall, Ewalt, and Blair (1945) indicate a wide range of emotional reaction in amputation cases in World War II. As diagnosed in these studies from psychiatric interviews, reactions vary from "cheerfulness" and "resignation" to those indicative of serious maladjustment, including "sex maladjustment". However, the attitude of society to the "hero" who was crippled in defense of his country, and the "hero's" perception of this attitude make this group essentially different psychologically. Furthermore, all subjects had good pre-morbid work records at the skilled level and up. Thus their vocational development up to becoming battle casualties was "normal" in comparison with the deaf, cerebral palsied, and neuropsychiatric groups.

All amputee cases (N=63) had been recently evacuated from South Vietnam to Walter Reed Army Hospital. Data was obtained through the cooperation of Captain Leonard Diamond, Ph.D., a Staff Psychologist working exclusively on the amputee ward. The average age of the group is 27.0 years (range 19-49). Average grade-level of education 12.4 (range 8-18). On Roe's (1957) classification system, 5 subjects were at level two, 5 at level three, 37 at level four, and 15 at level five. Of the 63 hospitalized subjects, 15 had involvement of the upper extremities, 48 of the lower.

The deaf

The deaf group was included because of the effects of sensory deprivation on social and psychological development, and thus presumably on vocational development. Myklebust (1960) considers the social (and thus occupational) marginality of the deaf in stressing the fact that there is no more important factor than isolation in the emotional adjustment of the hearing impaired. The social role of the deaf is variant from the dominant role of the hearing majority, and thus it can be assumed the work-value orientation of the deaf would also be variant.

The deaf sample (N=55) has an average age of 38.9 years (range 21-62) and an average grade-level of education of 14.2 (range 10-18). This is notably a highly educated and select sample of the deaf. The onset of deafness was from birth in the case of twenty-six subjcets. Occupational levels, according to Roe's (1957) classification were level one for 8 subjects, level two for 8 subjects, level three for 3 subjects, with the rest being rated level four. Hearing loss is rated as "partial" for 15 subjects with the rest rated as "total". The deaf sample was obtained through the cooperation of Mr. Frederick Carl Schreiber, Executive Secretary, The National Association of the Deaf, Washington, D.C.

The psychiatric patients

The final group of subjects of the study was composed of "chronic" patients of the Veterans Administration neuropsychiatric hospital at Lebanon, Pennsylvania, through the cooperation of the chief psychologist and his staff, in particular Dr. Francis Fields. This group was selected in that it represented severe alienation from society (and the normal world of work) on the basis of psychological and social factors without any physical involvement.

The group (N=56) had an average age of 43.8 years, and an average grade-level of education of 10.2. The age range is 24 to 60, the grade-level range is 6 to 16. The average age of onset of the disability is 30.7 years (i.e. 13 years prior to the date of testing). Length of hospitalization averages 9.7 years, ranging from less than a year to 26 years.

Chapter III

DEVELOPMENT OF THE WORK MOTIVATION SCHEDULE

As can be seen from the discussion of various studies of work motivation (cf. supra, pp.4-5), considerable variation is evident in the number of factors found and their definitions. Some of these differences are undoubtedly due to varying population from study to study, and to limited pools of items used in the factor-analytic studies. Accordingly, the present project aimed at collecting as comprehensive a pool of items as possible. A large portion of the items was drawn from earlier stages of authors' work in this area. Additional items were sought from graduate students and were also written by the authors themselves. Especially those factors which were suggested but not defined by previous factor-analytic studies were augmented with newly written items.

As guidelines in generating the items, the following defined or suggested work motivation factors were used:

1. Altruism (e.g. "being of help to another person")
2. Art ("work involving beauty of form and harmony of design")
3. Creativity ("being original", "using imagination")
4. Scientific inquiry ("solving technical problems", "advancing new theories")
5. Challenge ("difficult work", "work demanding perseverence")
6. Independence ("doing what you want to do")
7. Variety ("work that is always changing")
8. Prestige ("making a name for yourself")
9. Leadership ("directing others")
10. Pleasant associations ("good boss", "nice people")
11. Pleasant physical conditions ("having a pleasant place to relax during the break")
12. Security ("no strikes or lay-offs")
13. Material rewards ("good pay")
14. Personal enhancement ("work that helps you develop into a better human being")
15. Freedom from responsibility ("where you're not tied down")

A total of 262 items was collected and these were presented in the form of an inventory to 75 male college seniors, with instructions to rate each item on the degree to which the particular aspect of work is important in deciding about a job. (Ratings were made on a five point-scale ranging from "extremely important" to "not at all important".)

The responses of the students were used to reduce the pool of items to manageable size for handling by factor analysis. Three criteria were applied in deciding on whether or not to retain an item in the pool: first, items which were rated by practically all subjects in the same direction on the five-point scale were eliminated as non-discriminating. Second, items were eliminated if they were clearly "double-barreled" as indicated by very high correlations with more than one cluster of items grouped according to previous analytic studies and according to logical distinctiveness.[1] Third, no more than ten items were retained unique to any one potential factor; thus, while for "monetary rewards" factor more than twenty adequate items emerged, only the ten best (most unique and best discriminating) were retained.

Some of the items from the pool did not correlate with any "armchaired" factors. These were retained in order to determine in later procedures if perhaps some of them might tend to group together in factors not anticipated from previous research.

A total of 142 items was retained after this screening and these items were arranged in the form of a schedule to be administered to a large population of adults. The sample of normal population consisted of 200 white male and 200 white female subjects selected from a still larger pool of subjects in such a way so as to roughly approximate the U.S. 1960 census figures on age and education, with the exception that no subject was under 18 or over 64 years of age and no one had education less than six years of grammar school.[2] The larger pool of subjects was drawn from the metropolitan Washington area and consisted of industry workers, clerical workers, soldiers, college students, and parents of children in several elementary schools.

The 142 items were intercorrelated separately for male and female subjects. Since this matrix was too large for the application of available centroid analysis programs, the matrix was divided into two 60x60 matrices with 22 items temporarily eliminated from the matrix on the basis of very high correlations (.90+) with other items.[3] The assignment of items to the two 60x60 lists was not random: the 120 items were paired as closely as possible according to content and members of each pair were assigned to the two separate lists.

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[1] Three or four items each were chosen to represent previously found or potential factors of "monetary rewards," "personal enhancement," etc. Each of the 262 items was then correlated with the 15 cluster scores to establish whether or not an item tended to encompass more than one aspect of motivation.

[2] The stratification of samples resulted in a slight underrepresentation of subjects in the 18-25 age group and in educational groupings below high school. The approximation of census figures was deemed sufficiently close for the sample to be considered as representative of general population for purposes of factor analysis. In a later step, a still closer approximation was achieved with a smaller segment of subjects for normative purposes. (Cf. Appendix I, pp. 36-37).

[3] These items were considered to be virtual duplicates of other items and while retained for later procedures were not considered as having potential in contributing to the factorial definition of the work motivation dimensions.

On each of the two 60x60 matrices factor analysis by the centroid method (Thurstone, 1947) was applied followed by the Varimax method of orthogonal rotation (Kaiser, 1959).

The two analyses on the male subjects rendered 9 and 7 factors each; analyses on the women rendered 7 factors for both matrices. Some of the factors appeared in all four analyses (notably "altruism", "monetary rewards"), others were repeated in two or three analyses. A total of eleven different definable factors emerged and were labeled tentatively as Altruism, Artistic, Inquiry, Challenge, Personal Independence, Leadership, Prestige, Variety, Comfort, Monetary Rewards and Non-Responsibility. On the basis of the factor loadings in the four analyses, the Schedule was keyed for scoring of the eleven factors. Separate keys were prepared for men and women.[4] Half of the stratified sample (N=100) in the case of each sex was then used to correlate all 142 items in the Schedule with the 11 scale scores. The aim now was to reduce the list of items so that it could be subjected to a single overall factor-analysis for definitive grouping of items and in order to establish the final version of an easily administrable instrument. Accordingly, correlations of items with the temporary factor scores were used as the basis for this last screening of items. Items were eliminated: 1. if they appeared to be factorially complex ("double-barreled", i.e. correlating substantially with more than one factor subscore); 2. if they did not correlate with any of the eleven factors significantly and substantially; 3. if a further check of proportions of answers of this subgroup of the normal sample showed that they were non-discriminating (i.e. overhelming majority responding in one direction). A few of the items were also eliminated from factors which were "over-subscribed", i.e. represented by more than 10 items.

This screening procedure left 89 items in the Work Motivation Schedule. These were intercorrelated, this time using all 200 subjects of the stratified sample for each sex. The matrix of 89x89 for each sex was then factored again by the centroid method, followed by varimax orthogonal rotation. On the basis of this analysis the final determination of the factors was made and groupings of items given definitive labels, as follows:

Male	Female
1. Altruism	1. Altruism
2. Art	2. Art
3. Scientific Inquiry	3. Scientific Inquiry
4. Intellectual Challenge	4. Intellectual Challenge
5. Independence	5. Independence
6. Leadership	6. Leadership - Prestige

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[4] The keys for men and women differed in cases of some factors rather extensively; in the case of the Non-Responsibility factor, for example, the scale consisted of six items each for men and women, but only three items in common. The meanings of the factors were therefore not quite comparable, but for purposes of convenience in processing the identical labels were temporarily retained.

7. Prestige
8. Variety
9. Work Conditions & Associates
10. Monetary Rewards

7. Variety
8. Appreciation - Approval
9. Freedom from Stress
10. Monetary Rewards

From the inspection of factor loadings (Appendix III) it may be seen that in spite of all earlier efforts to remove "double-barreled" items, there still are a few items which have significant loadings on more than one factor. In the case of the male analysis this is true of the factors of Intellectual Challenge, Leadership and Prestige. This is not surprising: it would be distortive of reality to construe leadership situations which do not at the same time carry some "glory value", or genuine leadership situations which do not contain challenge. The items which are unique to the factors, however, and the relative differences in the magnitude of loadings of those items permit, in the opinion of the authors, a clear definition of each of these three factors as a relatively separate dimension. Similarly, for women, some items considered as defining the factor of Intellectual Challenge and the factor of Variety also load significantly on the factor of Independence.

The factorial structures of the work motivations of men and women differ most vividly in two respects. For women, the Leadership factor completely merges with the Prestige factor whereas the two are empirically separable in men. Apparently, the role of leadership in a work setting for a woman is still sufficiently rare so that it carries considerable "glory-value". Conversely, it is possible to interpret this as suggesting that for a woman it is perhaps easier to become "visible" in a prestigeful way by assuming a leadership position. For many men to be a "boss" is no particular distinction; for women, apparently it still is.

Again compared with men, the women differ in the factorial structure of motivation in the clear separation of two factors of extrinsic work values, which in the case of men merge together into one. For women, there is a distinction between pleasant work conditions by virtue of appreciation and regard from others and pleasant conditions due to the non-stressful nature of the work itself.

The extent to which the various factors correlate with one another was established by scoring the records of one hundred subjects of broad educational background and age who were not used in the factor analysis. Intercorrelations of the factors are presented in Tables 1 and 2 for men and women respectively.

It will be noted that the average intercorrelation between these scales is slightly higher for women than for men. This is consistent with the findings of other studies and reflects the fact that in general women, as compared to men, have less work experience.

In order to establish preliminary norms for men and women, 100 subjects of each sex were selected from the pool to approximate most closely the U.S. 1960 census figures on education and age. Appendix I (pp. 36-37) contains tables showing the degree to which correspondence to the census figures was achieved.

Table 1

Intercorrelations of Work Motivation Schedule scores
on a sample of men (N=100)

Scale	1	2	3	4	5	6	7	8	9	10
1. Altruism	1.00	.40	.46	.16	.05	.10	.14	.17	.17	.13
2. Art	.40	1.00	.47	.27	.26	.30	.42	.18	.39	.12
3. Scientific inquiry	.46	.47	1.00	.32	.21	.17	.17	.10	.15	.02
4. Intellectual challenge	.16	.27	.32	1.00	.54	.58	.25	.45	.04	-.12
5. Independence	.05	.26	.21	.54	1.00	.56	.45	.46	.18	.12
6. Leadership	.10	.30	.17	.58	.56	1.00	.52	.49	.11	.06
7. Prestige	.14	.42	.17	.25	.45	.52	1.00	.39	.50	.37
8. Variety	.17	.18	.10	.45	.46	.49	.39	1.00	.10	.05
9. Work conditions & assoc.	.17	.39	.15	.04	.18	.11	.50	.10	1.00	.55
10. Monetary rewards	.13	.12	.02	-.12	.12	.06	.37	.05	.55	1.00

.20 or above -- significant at the .05 level of confidence
.26 or above -- significant at the .01 level of confidence

Table 2

Intercorrelations of Work Motivation Schedule scores
on a sample of women (N=100)

Scale	1	2	3	4	5	6	7	8	9	10
1. Altruism	1.00	.51	.57	.27	.16	.28	.14	.20	.18	.09
2. Art	.51	1.00	.50	.40	.48	.39	.40	.21	.34	.18
3. Scientific inquiry	.57	.50	1.00	.32	.27	.33	.30	.24	.13	.12
4. Intellectual challenge	.27	.40	.32	1.00	.73	.52	.59	.37	.28	.17
5. Independence	.16	.48	.27	.73	1.00	.56	.61	.33	.50	.33
6. Leadership-prestige	.28	.39	.33	.52	.56	1.00	.63	.50	.37	.47
7. Variety	.14	.40	.30	.59	.61	.63	1.00	.40	.35	.30
8. Appreciation-approval	.20	.21	.24	.37	.33	.50	.40	1.00	.53	.52
9. Freedom from stress	.18	.34	.13	.28	.50	.37	.35	.53	1.00	.65
10. Monetary rewards	.09	.18	.12	.17	.33	.47	.30	.52	.65	1.00

.20 or above -- significant at the .05 level of confidence
.26 or above -- significant at the .01 level of confidence

The WMS scores means and standard deviations on the normative samples, as well as correlations of the scores with age and education are given in Tables 3 and 4.

Table 3

Means and standard deviations of the Work Motivation Schedule scores and correlations with age and education on the normative male sample (N=100)

Scale	Mean	SD	Correlation with	
			Age	Education
			Mean=38.21 SD =11.48	Mean=11.76 SD = 3.05
1. Altruism	25.22	8.98	.08	-.29 **)
2. Art	17.25	7.09	.00	-.40 **)
3. Scientific inquiry	31.50	11.79	-.21 *)	-.15
4. Intellectual challenge	26.86	5.72	.03	.15
5. Independence	23.23	6.04	-.03	.10
6. Leadership	23.48	6.98	.01	.05
7. Prestige	13.94	5.20	-.09	-.04
8. Variety	20.15	6.45	-.09	.02
9. Work conditions & assoc.	19.60	7.09	.14	-.31 **)
10. Monetary rewards	22.96	4.76	.04	-.34 **)

*) significant at .05 level of confidence
**) significant at .01 level of confidence

Table 4

Means and standard deviations of the Work Motivation Schedule scores and correlations with age and education on the normative female sample (N=100)

Scale	Mean	SD	Correlation with	
			Age	Education
			Mean=37.76 SD =11.69	Mean=11.61 SD = 2.24
1. Altruism	28.85	8.83	.02	-.13
2. Art	18.64	6.61	.06	-.21 *)
3. Scientific inquiry	17.67	7.96	-.07	.12
4. Intellectual challenge	17.96	4.71	-.15	.26 **)
5. Independence	24.26	7.63	-.15	.11
6. Leadership-prestige	23.57	9.11	-.04	.26 **)
7. Variety	16.39	6.34	-.14	.19
8. Appreciation-approval	11.65	2.39	.01	-.11
9. Freedom from stress	15.73	4.41	.10	-.24 *)
10. Monetary rewards	25.79	6.23	.10	-.14

*) significant at .05 level of confidence
**) significant at .01 level of confidence

It is noteworthy that with only one exception the scales do not correlate with the variable of age. The one exception is the Scientific Inquiry scale on the male form; younger subjects appear to value this aspect of work more highly than older ones.

All significant correlations of the scales with education are negative; less educated subjects appear to place more value on the humanitarian and humanistic aspects of work (Altruism, Art scales) and on extrinsic values of work conditions and monetary rewards.

To a less pronounced degree, the same negative relationships are reflected in the findings on the women sample. In addition, positive correlations of education with the scales of Intellectual Challenge and Leadership-Prestige should be noted.

The data on the normative sample maybe used conveniently for conversion of raw scores to standardized scores permitting direct comparison of elevation of scores from scale to scale. Appendix II (pp. 38-39) provides tables for this conversion.

Preliminary data were also compiled on test-retest and split-half reliability of the scales. Due to error in instructions, data on test-retest reliability at this writing is available on only 32 female and 22 male subjects. Inspite of the small size of the sample, the coefficents obtained clearly indicate that the scales are reliable to an acceptable degree.

Table 5

Test-retest and split-half reliabilities of male WMS scales

Scale	Test-retest N=22	Split-half *) N=100
1. Altruism	.92	.96
2. Art	.85	.82
3. Scientific inquiry	.82	.92
4. Intellectual challenge	.86	.86
5. Independence	.74	.87
6. Leadership	.89	.93
7. Prestige	.94	.85
8. Variety	.82	.88
9. Work conditions & assoc.	.87	.88
10. Monetary rewards	.95	.88

*) corrected by Spearman-Brown prophesy formula

Table 6

Test-retest and split-half reliabilities of female WMS scales

Scale	Test-retest N=32	Split-half *) N=100
1. Altruism	.81	.92
2. Art	.91	.88
3. Scientific inquiry	.90	.94
4. Intellectual challenge	.82	.86
5. Independence	.84	.91
6. Leadership-prestige	.80	.87
7. Variety	.88	.91
8. Appreciation-approval	.70	.75
9. Freedom from stress	.90	.85
10. Monetary rewards	.85	.91

*) corrected by Spearman-Brown prophesy formula

Chapter IV

RESULTS: COMPARISONS OF THE HANDICAPPED TO THE NON-HANDICAPPED

Since the four handicapped groups differ widely from one another in age and education, and since these two variables significantly affect subjects' performance on some of the Work Motivation Schedule scales, a control group for each of the handicapped groups was composed separately from the large pool of "normal" subjects used in the development of the Schedule. Each of the handicapped subjects was matched with an unhandicapped person in both age and education. A match was considered successful if the difference in the age between the two subjects was not in excess of two years and the difference in education not in excess of one. Table 7 presents the statistics on age and education of the handicapped and the control groups.

Table 7

Matching of handicapped groups to control groups in age and education

Group		Handicapped		Control	
		Mean	SD	Mean	SD
Cerebral palsied men N=23	Age	28.7	11.0	28.7	10.9
	Educ	11.0	2.2	11.3	1.6
Cerebral palsied women N=17	Age	27.4	7.6	27.8	6.7
	Educ	10.5	2.1	10.6	1.9
Amputees N=62	Age	27.0	7.9	27.4	7.3
	Educ	12.4	2.1	12.5	1.9
Deaf N=55	Age	38.9	8.9	39.2	8.8
	Educ	14.2	2.8	13.9	2.7
Psychiatric N=56	Age	43.8	8.3	43.4	8.9
	Educ	10.2	2.6	10.6	2.4

Each of the handicapped groups was then compared to its control group on the 10 Work Motivation Schedule scales by means of t-tests.

The cerebral palsied

As indicated earlier, this group is composed of both men and women. The two subgroups are rather comparable in age, education, employment, history and severity of illness. The work motivation patterns, however, when compared to the corresponding control groups, deviate in different respects.

The male group differs from normal control on two scales: Work Conditions and Associates, and Monetary Rewards. The cerebral palsied place considerably more value than normals on these extrinsic benefits of work. In the

Table 8

Comparison of the male cerebral palsied group to normal controls on WMS scales (N=23)

Scale	Handicapped Mean and SD	Control Mean and SD	t-value
1. Altruism	27.39	26.43	
	7.87	9.19	.370
2. Art	19.22	17.83	
	5.84	7.28	.699
3. Scientific inquiry	32.35	33.26	
	12.90	12.18	-.241
4. Intellectual challenge	24.61	26.35	
	5.71	6.13	-.973
5. Independence	24.78	24.52	
	5.88	6.66	.137
6. Leadership	23.00	22.61	
	6.79	8.00	.174
7. Prestige	16.96	13.87	
	5.15	5.61	1.900
8. Variety	21.74	18.30	
	6.51	5.34	1.911
9. Work conditions & assoc.	24.78	19.17	
	5.81	7.00	2.891 **)
10. Monetary rewards	25.65	22.48	
	4.44	5.88	2.020 *)

*) significant at .05 level (two-tailed)
**) significant at .01 level (two-tailed)

same direction, there are sizeable differences between this group and its controls on two other extrinsic work motivation scales, Prestige and Variety. While these differences are not significant due to the small number of cases, the magnitude of the differences points to the likelihood that they would be replicable.

While there is the same tendency of the women cerebral palsied to value more highly the extrinsic benefits of work, only on one scale--Leadership-Prestige--is the difference significant. There is also a tendency to place higher valuation on aspects of work subsumed under the scale of Scientific Inquiry.

In general, the trends appear to indicate a lack of realism on the part of this group in appraising the potential work situation. A related finding (cf. also Chapter V, infra, p.27) of a very high correlation between the scales Monetary Rewards and Altruism in this group tends to point to an indiosyncratic conception of work by cerebral palsied women. The group also shows a tendency to adopt a positive response set to the items; in this respect the subgroup is

Table 9

Comparison of the female cerebral palsied group to normal controls on WMS scales (N=17)

Scale	Handicapped Mean and SD	Control Mean and SD	t-value
1. Altruism	32.41	30.88	
	4.58	7.54	.69
2. Art	21.07	20.59	
	5.97	6.58	.21
3. Scientific inquiry	23.82	19.70	
	7.69	7.58	1.52
4. Intellectual challenge	19.23	19.35	
	4.08	5.06	-.07
5. Independence	25.82	25.88	
	8.66	5.94	-.02
6. Leadership-prestige	31.00	23.82	
	10.14	9.25	2.09 *)
7. Variety	20.35	16.53	
	6.42	7.04	1.60
8. Appreciation-approval	12.41	12.23	
	2.33	1.89	.23
9. Freedom from stress	17.35	15.35	
	4.64	4.92	1.18
10. Monetary rewards	28.29	26.00	
	5.08	5.14	1.27

*) significant at .05 level (two-tailed)

different from any other subgroup to which the Work Motivation Schedule was administered; for all other groups the positive response set was either absent or negligible.[1]

The amputees

With this group of the recently handicapped, a rather consistent and interesting pattern of work motivation emerges. The elevation of scores is significantly higher on the scales of Altruism, Prestige and Work Conditions & Associates. Since all these aspects of work have to do directly with the relationship of the subject to other people, the elevation of scores probably means that these subjects, who are all at present unemployed while recovering from war injuries,

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[1] For the normal sample and the other handicapped groups the average response to the WMS items was very close to 3.00 on a 5-point scale; in the case of the women cerebral palsied it was well in excess of the middle value (3.46).

Table 10

Comparison of the male amputees group to normal control on WMS scales (N=62)

Scale	Handicapped Mean and SD	Control Mean and SD	t-value
1. Altruism	28.48 7.74	23.05 8.93	3.59 **)
2. Art	19.34 7.12	17.60 7.19	1.34
3. Scientific inquiry	35.37 10.21	33.79 11.58	.80
4. Intellectual challenge	27.66 4.10	27.89 4.55	-.29
5. Independence	25.53 5.54	24.71 5.47	.82
6. Leadership	24.82 6.40	24.18 6.28	.56
7. Prestige	17.10 4.86	14.89 5.10	2.45 *)
8. Variety	23.19 6.13	22.45 6.68	.64
9. Work conditions & assoc.	21.06 7.05	18.00 5.85	2.61 *)
10. Monetary rewards	23.98 5.51	22.53 5.56	1.45

*) significant at .05 level (two-tailed)

**) significant at .01 level (two-tailed)

view their future work situation as a testing ground of their significance to others. By helping others, by being held in regard and by being accepted and well liked, these men can continue to reap the compensations upon which they perhaps have had to rely for strength in the crisis of self-redefinition forced upon them by the injury, i.e. the compensations of high regard and admiration by others for having served the country with a special sacrifice.

While there is the elevation of scores on the three scales most directly concerned with interpersonal relationships, there is no evidence of denial of the importance of the other aspects of work: intrinsic satisfactions from the nature of work and the value of work as a guarantee of independent existence. It may be said, therefore, that the experience of amputation has sensitized these young men to work as an occasion for obtaining regard from others, but it has not redefined other aspects of work motivation to any measurable degree.

The deaf

In somewhat similar fashion the pattern of sensitization to the interpersonal aspects of work is found also in the deaf subgroup. Because the handicap is one directly affecting the facility of interaction with others, it appears logical to find that work is viewed as an oppurtunity to communicate with others. The tendency to value the artistic aspects of work also appears to make sense, in that this is one area not requiring verbal skills.

Table 11

Comparison of the male deaf group to normal control on WMS scales (N=55)

Scale	Handicapped Mean and SD	Control Mean and SD	t-value
1. Altruism	27.24 7.75	23.04 8.81	2.63 *)
2. Art	18.80 7.06	15.31 7.00	2.58 *)
3. Scientific inquiry	33.22 11.11	29.33 13.00	1.67
4. Intellectual challenge	25.80 6.27	27.53 5.50	-1.52
5. Independence	24.76 6.42	23.36 5.72	1.20
6. Leadership	20.93 7.87	22.85 6.53	-1.38
7. Prestige	15.07 4.64	13.11 4.75	2.17 *)
8. Variety	22.96 7.21	20.85 6.56	1.59
9. Work conditions & assoc.	22.13 5.77	18.40 6.08	3.27 **)
10. Monetary rewards	20.82 5.14	21.93 4.63	-1.18

*) significant at .05 level (two-tailed)
**) significant at .01 level (two-tailed)

While the differences are not significant, it is interesting to note the tendency to undervalue work as opportunity for intellectual challenge and for leadership. The added burdens of difficulty of tasks and of responsibility for others apparently tend to be avoided by the deaf whose need to prove themselves is perhaps not served best by entering those work situations in which the probability of failure is by definition higher: it is easier to fail as a leader than as subordinate, or in work which is inherently more difficult and complex.

The psychiatric patients

The contrast of the psychiatric group to the normal controls produces greater degrees of significance and the greatest number of scales on which significant differences are found. On the other hand, the pattern is not one which permits ready interpretation. In fact, there appears to be a lack of realism in projecting to work situations by this unemployed and isolated chronic group of hospitalized patients. There is an unusual separation of the valuation levels of scientific inquiry and intellectual challenge, the former being quite high, the latter quite low. The high valuation of art, scientific inquiry, prestige in work suggest a somewhat grandiose projection of self in the world of work, while at the same time there is demonstrated a reluctance to face the challenge which necessarily attends such aspirations. The attachment of considerable importance to work conditions and associates again appears here, as in other handicapped groups. In this case, the overvaluation of this extrinsic work aspect is perhaps in part due to the experience of close living in the institutional setting.

Table 12

Comparison of the male psydhiatric group to normal control on WMS scales (N=56)

Scale	Handicapped Mean and SD	Control Mean and SD	t-value
1. Altruism	28.00 9.15	25.68 9.37	1.31
2. Art	21.50 7.80	17.27 7.08	2.98 **)
3. Scientific inquiry	35.21 12.53	29.30 13.09	2.42 *)
4. Intellectual challenge	24.50 6.96	27.07 5.55	-2.14 *)
5. Independence	24.78 6.43	22.45 6.59	1.88
6. Leadership	22.66 8.36	23.57 6.62	-.63
7. Prestige	16.61 5.21	13.64 5.47	2.91 **)
8. Variety	19.86 7.59	20.55 6.95	-.50
9. Work conditions & assoc.	25.66 6.26	20.27 7.56	4.07 **)
10. Monetary rewards	24.14 5.03	22.98 4.92	1.22

*) significant at .05 level (two-tailed)
**) significant at .01 level (two-tailed)

Chapter V

RESULTS: INTRA-GROUP FINDINGS

While it is not possible to contrast directly the four handicapped groups on their performance on the Schedule because of differences in age, education and employability, it is nevertheless interesting to examine certain aspects of the Work Motivation Schedule results within each group, and to remark on any trends of differences between the groups which may be meaningful inspite of the differences on demographic variables.

First of all, when the handicapped groups are compared with one another and with the normative sample, there appear to be differences in the convergence or divergence of particular scales of the Schedule. Moreover, there are differences in the degree of overall differentiation of the work motivation domain as manifested by the average intercorrelation of the scales. Tables 13 to 17 are presented in this chapter for inspection and contrast.

It will be observed that all of the male handicapped groups exhibit a greater degree of overall convergence of the scales than the normative group (cf. Table 1, supra p.16) The average intercorrelation for the normative group is .268 whereas for the male handicapped groups the averages are as follows: cerebral palsied .411, amputees .366, deaf .408 and psychiatric .660. It is not surprising to find that the least differentiation of work motivation domain is found in the psychiatric sub-group composed of chronic patients who have been out of the world of work for a considerable time. It also appears logical that the amputee group, having had most comparable work experiences to the normative group, manifests the greatest degree of differentiation in this regard.

Contrasts between the groups on the convergence or divergence of particular scales might also be fruitful although more difficult to draw, because they are affected by the overall degree of differentiation of the work motivation domain and because of random fluctuation in the size of correlation coefficients, expected when dealing with relatively small groups. One possible fruitful method of analysis would be to subject each intercorrelation matrix to a second-order factor analysis, in an attempt to discover possible meaningful differences in the clustering of scales into such groupings as intrinsic work motivation, extrinsic work benefits, interpersonal aspects of work, etc. Optimally, such a procedure should be carried out on a larger number of cases, and it was not attempted here.

Examination of the relationships of age and education variables, as well as disability severity and quality, to the Work Motivation Schedule scales yields some noteworthy results. For the cerebral palsied men, education tends to be positively related to Leadership, Prestige and Work Conditions and Associates. While the first two correlations parallel those found in the normal sample, the last one is rather opposite in direction, perhaps again reflecting the high sensitivity of the handicapped to acceptance. An interesting relationship found with this subgroup of handicapped is one between history of employment and the WMS scale of Intellectual Challenge: those who have a history of employment, as compared to those who have never been employed, value

Table 13

Intercorrelations of WMS scales, age and education on the male cerebral palsied sample (N=23)

Scale	1	2	3	4	5	6	7	8	9	10	Age	Educ
1 Altruism	1.00	.28	.56	.41	-.20	.38	.52	.57	.18	.11	.33	-.17
2 Art	.28	1.00	.64	.66	.33	.68	.47	.39	.20	.14	.16	.12
3 Scientific inquiry	.56	.64	1.00	.64	.07	.65	.46	.64	.22	.14	.23	.05
4 Intellectual challenge	.41	.66	.64	1.00	.17	.58	.43	.35	.01	.33	.33	-.17
5 Independence	-.20	.33	.07	.17	1.00	.47	.48	.32	.50	.35	-.26	.26
6 Leadership	.38	.68	.65	.58	.47	1.00	.74	.56	.53	.49	-.14	.39
7 Prestige	.52	.47	.46	.43	.48	.74	1.00	.64	.62	.49	-.11	.36
8 Variety	.57	.39	.64	.35	.32	.56	.64	1.00	.63	.23	.08	.14
9 Work conditions & assoc.	.18	.20	.22	.01	.50	.53	.62	.63	1.00	.45	-.37	.42
10 Monetary rewards	.11	.14	.14	.33	.35	.49	.49	.23	.45	1.00	-.29	.08
Age	.33	.16	.23	.25	-.26	-.14	-.11	.08	-.37	-.29	1.00	-.50
Education	-.17	.12	.05	-.03	.26	.39	.36	.14	.42	.08	-.50	1.00

coefficient at or above .42 significant at .05 level
coefficient at or above .54 significant at .01 level

intellectual challenge considerably more. They apparently have been exposed to the rewards of mastery of tasks, which are foreign to those who have not worked. The variable of social activity (rating of lack of social isolation) is likewise significantly related to the Challenge factor. This is particularly interesting since the two indices--history of employment and social activity--are not in themselves related. Further, if only from the point of view of validity of the scale, it is gratifying to find an association of the eye-hand coordination index with the scale of Art. Another interesting relationship is a very high degree of association between speech intelligibility rating and the valuation of monetary rewards of work. On the whole, it appears that with cerebral palsied a higher degree of adjustment or better functioning is correlated positively with higher valuation of work.

Because of the very small number of cases, only trends can be observed in the findings on the cerebral palsied women. There is a definite tendency for the younger subjects to place higher importance on almost any aspect of work. Interpretation of this finding is made difficult, however, by the fact that the younger subjects are also the ones who are better educated, and proportionately more of them are currently employed. In fact, it is probably the variables of higher education and experience of employment that are responsible for higher valuation of work rather than the age. A very high correlation is found between the scale of Appreciation-Approval and speech intelligibility rating and a somewhat less pronounced correlation of this scale with the rating of social activity. This of course makes good sense: the experience of favorable reception is more important to those subjects who in fact are able to have a more normal degree of social interaction.

Table 14

Intercorrelations of WMS scales, age and education on the female cerebral palsied sample (N=17)

Scale	1	2	3	4	5	6	7	8	9	10	Age	Educ
1 Altruism	1.00	.43	.44	.31	.13	-.06	.19	.32	.38	.80	-.24	-.04
2 Art	.43	1.00	.68	.18	.23	.26	.20	.07	.12	.49	.09	-.12
3 Scientific inquiry	.44	.68	1.00	.32	.33	.36	.12	.20	.21	.43	-.13	-.01
4 Intellectual challenge	.31	.18	.32	1.00	.51	-.08	-.17	.28	.32	.25	-.53	.28
5 Independence	.13	.23	.33	.51	1.00	.45	.42	.67	.67	.33	-.42	.30
6 Leadership-prestige	-.06	.26	.36	-.08	.45	1.00	.64	.64	.27	.26	-.22	.28
7 Variety	.19	.20	.12	-.17	.42	.64	1.00	.64	.58	.53	-.33	.32
8 Appreciation-approval	.32	.07	.20	.28	.67	.64	.64	1.00	.65	.55	-.60	.69
9 Freedom from stress	.38	.12	.21	.32	.67	.27	.58	.65	1.00	.67	-.62	.47
10 Monetary rewards	.80	.49	.43	.25	.33	.26	.53	.55	.67	1.00	-.48	.21
Age	-.24	.09	-.13	-.53	-.42	-.22	-.33	-.60	-.62	-.48	1.00	-.62
Education	-.04	-.12	-.01	.28	.30	.28	.32	.69	.47	.21	-.62	1.00

coefficient at or above .49 significant at .05 level
coefficient at or above .64 significant at .01 level

Table 15

Intercorrelations of WMS scales, age and education on amputees sample (N=62)

Scale	1	2	3	4	5	6	7	8	9	10	Age	Educ
1 Altruism	1.00	.62	.52	.15	.13	-.03	.17	.08	.50	.23	-.02	-.11
2 Art	.62	1.00	.58	.33	.34	.17	.37	.32	.62	.38	-.17	-.09
3 Scientific inquiry	.52	.58	1.00	.57	.31	.24	.25	.13	.27	.18	-.04	-.11
4 Intellectual challenge	.15	.33	.57	1.00	.61	.56	.30	.32	.17	.14	.08	.11
5 Independence	.13	.34	.31	.61	1.00	.75	.45	.35	.46	.42	-.07	.03
6 Leadership	-.03	.17	.24	.56	.75	1.00	.62	.30	.34	.35	-.08	.15
7 Prestige	.17	.37	.25	.30	.45	.62	1.00	.41	.64	.51	-.39	.08
8 Variety	.08	.32	.13	.32	.35	.30	.41	1.00	.40	.20	-.11	.13
9 Work conditions & assoc.	.50	.62	.27	.17	.46	.34	.63	.40	1.00	.73	-.25	-.28
10 Monetary rewards	.23	.38	.18	.14	.42	.35	.51	.20	.73	1.00	-.35	-.17
Age	-.02	-.17	-.04	-.08	-.07	-.08	-.39	-.11	-.25	-.35	1.00	.11
Education	-.11	-.09	-.11	.11	.03	.15	.08	.13	-.28	-.17	.11	1.00

coefficient at or above .26 significant at .05 level
coefficient at or above .33 significant at .01 level

The amputee group is rather homogeneous and it is therefore not surprising that few significant relationships are observed of subject variables to the WMS scales. Age and level of education do not seem to make much difference in what aspect of work is especially valued. The only exceptions to this are slight tendencies by the older subjects to place less importance on prestige and monetary rewards considerations. The nature or severity of amputations are not related to any WMS scores.

Table 16

Intercorrelations of WMS scales, age and education
on the deaf sample (N=55)

Scale	1	2	3	4	5	6	7	8	9	10	Age	Educ
1 Altruism	1.00	.44	.59	.57	.46	.52	.38	.42	,19	.10	.23	.00
2 Art	.44	1.00	.46	.30	.33	.39	.45	.41	.50	.22	.16	-.29
3 Scientific inquiry	.59	.46	1.00	.74	.57	.67	.55	.58	.09	.15	.07	.14
4 Intellectual challenge	.57	.30	.74	1.00	.83	.69	.45	.64	-.01	.12	.14	.40
5 Independence	.46	.33	.57	.83	1.00	.63	.41	.72	.13	.10	.12	.26
6 Leadership	.52	.39	.67	.69	.63	1.00	.71	.60	.03	.01	.07	.12
7 Prestige	.38	.45	.55	.45	.41	.71	1.00	.49	.32	.32	.06	-.08
8 Variety	.42	.41	.58	.64	.72	.60	.49	1.00	.32	.15	.06	.10
9 Work conditions & assoc.	.19	.50	.09	-.01	.13	.03	.32	.32	1.00	.62	.14	-.34
10 Monetary rewards	.10	.22	.15	.12	.10	.01	.32	.15	.62	1.00	.17	-.21
Age	.23	.16	.07	.14	.12	.07	.06	.06	.14	.17	1.00	-.01
Education	.00	-.29	.14	.40	.26	.12	-.08	.10	-.34	.21	-.01	1.00

coefficient at or above .27 significant at .05 level
coefficient at or above .35 significant at .01 level

While the deaf group comprises a rather selective sample of highly educated subjects, it will be seen that variation in education still has an effect on the degree of valuation of some aspects of work, i.e. it influences positively the importance attached to intellectual challenge and negatively to the considerations of work conditions and associates. The latter finding is quite comparable to the male normative group. The rating of severity of deafness is correlated significantly and substantially (-.42) with the Variety scale. This might indicate that the more severely handicapped deaf are more reconciled to doing routine work.

The most notable finding on the psychiatric sample is the consistently negative correlations of the level of education with all of the WMS scales. This is directly opposite to what is observed with most every other group to which WMS has been administered. The findings might be interpreted as indicating that the psychiatric disability shows more debilitative effects, as far as work adjustment is concerned, in those subjects who were trained to work at higher levels. This is even more remarkable when considering the fact that the more highly educated subjects are also those who are younger and who have shorter hospitalization histories.

Table 17

Intercorrelations of WMS scales, age and education
on the mentally disturbed (N=56)

Scale	1	2	3	4	5	6	7	8	9	10	Age	Educ
1 Altruism	1.00	.69	.72	.75	.56	.70	.76	.63	.56	.52	.29	-.28
2 Art	.69	1.00	.86	.81	.61	.73	.72	.79	.57	.60	.12	-.44
3 Scientific inquiry	.72	.86	1.00	.87	.53	.77	.77	.65	.53	.60	.04	-.29
4 Intellectual challenge	.75	.81	.87	1.00	.71	.80	.77	.69	.65	.67	.06	-.22
5 Independence	.56	.61	.53	.71	1.00	.51	.52	.68	.72	.67	.14	-.22
6 Leadership	.70	.73	.77	.80	.51	1.00	.82	.57	.46	.53	.08	-.26
7 Prestige	.76	.72	.77	.77	.52	.82	1.00	.58	.66	.61	.35	-.30
8 Variety	.63	.79	.65	.69	.68	.57	.58	1.00	.63	.45	.13	-.29
9 Work conditions & assoc.	.56	.57	.53	.65	.72	.46	.66	.63	1.00	.68	.23	-.24
10 Monetary rewards	.52	.60	.60	.67	.67	.53	.61	.45	.68	1.00	.17	-.22
Age	.29	.12	.04	.06	.14	.08	.35	.13	.23	.17	1.00	-.32
Education	-.28	-.44	-.29	-.22	-.22	-.26	-.30	-.29	-.24	-.22	-.32	1.00

coefficient at or above .27 significant at .05 level
coefficient at or above .34 significant at .01 level

The variables of the time of onset of ilness, length of hospitalization or number of previous hospitalizations are not related to the Work Motivation Schedule scales. In view of this, the correlations of age and education with WMS scales appear to be attributable solely to the variation of those two variables apart from other related subject variables.

Chapter VI

GENERAL DISCUSSION OF RESULTS

The first task of the study was to refine the scales of the Work Motivation Schedule so as to make it applicable to the various groups of the handicapped, and to obtain a more clearcut knowledge of the structure of work values in the "normal" comparison samples of men and women.

Previous discussion (cf. supra, p.45), has indicated considerable differences in the number of factors and in their definitions in earlier attempts to classify work values. Such variations are probably due to limited pools of items used in previous factor analytic studies, and also to varying populations. However, a comparison of the classification achieved in this study and the more recent classification of Super (1961) reveals a high degree of similarity (see Table 18). For purposes of discussion the comparison has been ordered under Ginzberg's (1951, p. 217) three-fold grouping of satisfactions derived from work (intrinsic-rewards-concomitants), taking note however of Super's finding (1962, p. 233-234) that the value structure of individuals cuts across this trichotomy, "so that people are best characterized as seeking some intrinsic values, certain rewards, and particular concomitant satisfactions". A high degree of similarity is also noted for

Table 18

Comparison of Work Value groupings in men

Kinnane - Suziedelis	Super
Intrinsic	
1 Altruism	1 Altruism
2 Art	2 Esthetics
3 Scientific inquiry	3 Creativity
4 Intellectual challenge	4 Intellectual stimulation
5 Independence	5 Independence
6 Leadership	6 Management
	7 Achievement
Extrinsic : Rewards	
7 Prestige	8 Prestige
8 Monetary rewards	9 Economic returns
	10 Way of life
	11 Security
Extrinsic : Concomitants	
9 Variety	12 Variety
10 Work conditions & associates	13 Associates
	14 Supervisory relationship
	15 Surroundings

the structuring of the work values of women when the present classification is compared with that of Martin (1963) who used an earlier form of the Work Motivation Schedule. As was expected from earlier investigations (Martin, 1963; Kinnane and Bannon, 1964), there are considerable sex differences in the factorial structure or work motivations, in that the value structure of women cuts across Ginzberg's trichotomy to such an extent that the intrinsic - extrinsic - concomitant classification is of little value. For example, the intrinsic factor of leadership merges with the extrinsic - reward factor of prestige, whereas the two are empirically separable in men (cf. supra, p. 14).

The general conclusions from this first phase of the study are that (1) a meaningful structuring of work values has been achieved for both men and women; (2) the work motivations of men and women differ significantly in their factorial structure; (3) the intrinsic - extrinsic - concomitant trichotomy of Ginzberg, while meaningful from a philosophical standpoint, is of little practical value for the study of the work satisfactions of women, and of somewhat limited value for men.

The second goal of the study was to explore the work motivations of selected groups of the physically handicapped in comparison with matched "normal" samples of men and women. This phase of the study is predicated on the proposition that physical disability is a phenotype (surface) classification and that the situational factors of the handicapped produce a unique alteration in the individual's self-concept and in his interpersonal relations. The underlying assumption is that physical disability manifests its psychological effects through social (interpersonal relationships) rather than by biological mechanisms. The second theoretical proposition, deduced from self-theory, is that there exists a consistency between general "life" values and particular values, as in work. The second task of the study was essentially then to relate dominant and variant social roles to dominant and variant value orientations.

Results of the investigation indicate that there are significant differences in patterns of work motivations between the handicapped minority and the "normal" non-handicapped majority. Furthermore, it is the variant nature of the social role of the handicapped which appears to have considerable relevance for variations in their work motivations. The choice of the occupational role would appear to be significantly related to the perceived social role in the world of work. Thus, for example, the feelings of the recent amputees from Vietnam of being marginal socially while in hospital, and their concern of being significant to others again after discharge from hospital, may well account for the significantly elevated scores on the scales of Altruism, Prestige, Work Conditions and Associates. It is only on these highly interpersonal scales that they differ from the normal group.

All the men in this sample had stable pre-morbid work records at the skilled level and up. Their vocational development up to becoming battle casualties was "normal" in comparison with the deaf, neuropsychiatric and cerebral palsied groups. Thus, although they now place significantly more importance on helping others (Altruism), being important in the eyes of others (Prestige), being accepted and well-liked (Work Conditions and Associates), they do not devalue the importance of the other aspects of work, such as the value of work as the key to independent existence and as a source of intrinsic satisfactions. It appears clear that in this personal crisis of self-redefinition, they seek in a compensatory manner, to prolong into the world of work those interpersonal values that are bringing them through this crisis: the compensations of high esteem and admiration for having suffered in defense of their country. The attitude of society to the "hero" who was crippled in defense of freedom, and the "hero's" perception of this attitude makes this group essentially different psychologically from the other handicapped groups and thus different also in it's valuation of the rewards of work.

In contrast, the neuropsychiatric group consists of individuals who have been severely alienated from society and the normal world of work for an average of 13 years prior to this evaluation. Unlike the amputees, they have experienced the effects of the socially derogatory attitudes described by Wright (1960) in her discussion of "inferior status position". They are marginal socially and "chronic" in the sense that they have experienced severe self-devaluation and a loss of a feeling of competence in work activity. Thus it is not surprising to find that the variant nature of the social role of these patients is apparently related to value-orientations that are highly variant from the dominant value-orientation of the non-handicapped majority. The contrast of this group to the normal controls produced greater degrees of significance and the greatest number of value scales on which significant differences are found. Attempts to interpret the value pattern of these patients leads to the conclusion that little reality testing of the self against the environment of work has occurred, that the isolated and deviant character of the social role is reflected in highly variant work-value patterns. Scientific inquiry, for example, is valued highly, but intellectual challenge is undervalued. Thus the avoidance of reality testing permits a grandiose projection of the self into the occupational world by which art, scientific inquiry and prestige are highly valued, but the challenge of work and study is pathologically eschewed. The dependency needs of the patients are possibly reflected in the higher valuation of work conditions and associates, although this valuation may also be a function of institutional living. The severely debilitating effects of psychiatric illness on implementing a social role in work is dramatically apparent in the fact that the value patterns of the more highly educated patients, who also are younger and with briefer histories of hospitalization, show a tendency toward general devaluation of all aspects of work.

In the male cerebral palsied group, it is again apparent from an overall view of the findings that a higher degree of personal adjustment (better social functioning) is correlated positively with higher valuation of work. Intellectual challenge is valued more highly by those who have had more work experience and more social contact (rating of degree of social isolation). Apparently where work experience provides some rewards for mastery and social intercourse there is less reluctance to face the intellectual challenge which necessarily attends any aspiration to independent and gainful employment. The high degree of association between the rating of speech intelligibility and valuation of the monetary rewards of work is indicative of the extent to which the cerebral palsied worker associated effective interpersonal relationship with making an independent living. The struggle for self-support work is clear also in the significantly higher valuation of the more extrinsic benefits of work, such as work conditions and associates, and monetary rewards.

In the group of cerebral palsied women only trends can be observed because of the small number of cases. Again the perceived potentiality of work for implementing a social, interpersonal role is noted in the very high correlation between speech intelligibility and the valuation of work conditions and associates (appreciation-approval), and in the high correlation of this scale with degree of social activity. On the other hand, the lack of realism of this group results in a highly idiosyncratic concept of work in which altruism is highly associated with monetary rewards.

In the deaf sample it is also the interpersonal aspects of work that are most highly valued. Because the handicap directly affects social interaction, the deaf value work more highly as providing an oppurtunity for communicating with others. The greater the severity of the deafness, however, the more reconciled they become to doing routine work. There is a tendency also for the deaf to under-value work as a source of intellectual challenge and leadership, although the general valuation of work increases with education. Presumably the possibility of failure and the threat to feelings of competence increases with the assumption of authority and challenge.

Implications of the study

This study establishes clearly that the somatopsychological relationship between disability and vocational behavior is not a direct one, but is largely mediated by personal and interpersonal variables. Certainly the handicapping effects of the disability are involved (e.g., speech intelligibility in the C.P. groups), but it is essentially the individual's perception of the handicap, and his perception of the effect of the disability on his relationship with others which largely determines his expectation of what satisfaction work can provide.

The general results of the study and the previous study (Kinnane and Suziedelis, 1964), lead to the conclusion that a relationship exists between the nature of a particular handicap and the psychological meanings of the handicap as sources of interpersonal anxiety or concern. Furthernore, among the various kinds of handicap studied, there are differences in the extent to which particular areas of interpersonal interaction are affected. Finally these interpersonal concerns significantly affect the valuation of work (satisfactions expected from work), in that the handicapped are sensitized to those interpersonal aspects of work which cause them concern. Thus the variant social role of the handicapped (cf. supra, p. 7) in relation to the dominant role of the non-handicapped majority, is reflected in a variant work-value orientation.

Perhaps the most important research task now is to relate the socio-psychological adjustment of various groups of the physically handicapped to patterns of work valuation, on the basic assumption that anxieties engendered in particular areas of interpersonal interaction are directly reflected in variant patterns of work valuations (the satisfactions expected from work). This is currently being explored on a pilot basis by the present investigators on a group of amputees from the Vietnam conflict.

Finally, the instruments developed in this study, which are applicable to both normal and handicapped groups of men and women, may well be useful in providing the handicapped individual with a clearer understanding of the satisfactions that he seeks from work, so that he can make occupational decisions more in line with his values.

SUMMARY

This study, designed to explore the work values of the physically handicapped, was predicated on two major theoretical propositions. First, that physical disability is a phenotypic (surface) classification, in that the handicap manifests its psychological effects through social rather than biological mechanisms, in a relationship involving primarily the cognitive aspects of the individual's reaction to his altered life situation. Second, as a deduction from "self-theory", there exists a consistency between general "life" values and particular values, as in work.

The study was conducted in two phases. The first task was to refine the scales of the Work Motivation Schedule so as to make it applicable to the various groups of the handicapped, and to obtain a more clearcut knowledge of the structure of work values in the "normal" comparison samples of men and women. Accordingly, a large universe of work-value items was collected using as a guide the factors suggested by previous factor-analytic studies as well as "armchaired" factors deduced from theory. This universe of items, after refinement on the basis of pilot pretesting was administered in the form of an inventory to a sample of the normal population, consisting of 200 white male and 200 white female subjects selected to roughly approximate the 1960 U.S. Census figures on age and education (age limits, 18 to 64, with no subject having less than 6 years of grammar school). Subjects were instructed to rate each item on the degree to which the particular aspect of work was important in deciding about a job. The data obtained was submitted to several procedures of factor analysis, with ten value factors for each sex emerging as the final result. Male factors are: 1. Altruism; 2. Art; 3. Scientific Inquiry; 4. Intellectual challenge; 5. Independence; 6. Leadership; 7. Prestige; 8. Variety; 9. Work Conditions and Associates; 10. Monetary Rewards. Female factors are: 1. Altruism; 2. Art; 3. Scientific Inquiry; 4. Intellectual Challenge; 5. Independence; 6. Leadership - Prestige; 7. Variety; 8. Appreciation - Approval; 9. Freedom from Stress; 10. Monetary Rewards.

The second task of the study was to apply the scales of the Work Motivation Schedule to four selected groups of the physically handicapped: cerebral palsied, deaf, recent amputees from the war in Vietnam, and neuro-psychiatric patients. These groups were selected to provide the widest possible basis for the systematic study of work-value orientation as a mediation between disability and vocational behavior, i.e., potential for wide variations in (a) the handicapping effects of the disability itself; (b) individual reactions to the disability; (c) the attitudes of society; (d) the disabled individual's reactions to these social attitudes.

The results of the comparison of these groups with matched "normal" samples of men and women indicate that there are significant differences in patterns of work motivations. Furthermore, it is the variant nature of the social role of the handicapped which appears to have considerable relevance for variations on their work motivations. The choice of the occupational role would appear to be significantly related to the perceived social role in the world of work.

Thus for example, the feelings of the recent amputees from Vietnam (all with stable premorbid work records) of being marginal socially while in hospital, and their concern of being significant to others again after discharge,

may well account for the significantly elevated scores on the scales of Altruism, Prestige, Work Conditions and Associates. It is only on these highly interpersonal scales that they differ from the normal sample. In contrast, the highly variant social role of the neuro-psychiatric group is apparently related to value-orientations that are highly variant from the dominant value-orientation of the non-handicapped majority . In the male cerebral palsied group, and to a lesser extent in the female group, it is apparent that a higher degree of personal adjustment (better social functioning) is correlated positively with higher valuation of work. Finally, in the deaf sample it is also the interpersonal aspects of work that are most highly valued. Because the handicap directly affects social interaction, the deaf value work more highly as providing an opportunity for communicating with others.

The general results of the study and the previous study (Kinnane and Suziedelis, 1964), lead to the conclusion that a relationship exists between the nature of a particular handicap and the psychological meanings of the handicap as sources of interpersonal anxiety or concern. Furthermore, among the various kinds of handicap studied, there are differences in the extent to which particular areas of interpersonal interaction are affected. Finally, these interpersonal concerns significantly affect the valuation of work (satisfactions expected from work), in that the handicapped are sensitized to those interpersonal aspects of work which cause them concern. Thus the variant social role of the handicapped in relation to the dominant role of the non-handicapped majority, is reflected in a variant work-value orientation.

The most important research task now is perhaps to relate the socio-psychological adjustment of various groups of the physically handicapped to patterns of work valuation. This is currently being explored on a pilot basis by the present investigators on a group of amputees from the Vietnam conflict.

As for the practical applications of the study, it is safe to assume that the male and female forms of the Work Motivation Schedule, applicable as they are to both "normal" and handicapped groups, will be useful in providing the handicapped individual with a clearer understanding of the satisfactions he seeks from work, so that he can make his occupational decisions more in line with his values.

APPENDIX I

A. Correspondence of the male normative sample to 1960 census on age and education--figures given are number of subjects in each category, with corresponding census percentages (rounded) in parentheses

Education Age	5-8	8-11	12	13-15	16	17+	TOTAL
18 - 19		(2)	5 (2)	(1)			5 (5)
20 - 24	(1)	2 (3)	7 (4)	1 (3)	(1)		10 (12)
25 - 29	1 (2)	1 (2)	5 (4)	2 (1)	2 (1)	(1)	11 (11)
30 - 34	1 (2)	4 (3)	5 (4)	2 (1)	1 (1)	1 (1)	14 (12)
35 - 39	5 (3)	4 (3)	3 (4)	2 (1)	1 (1)	1 (1)	16 (13)
40 - 44	3 (3)	4 (3)	4 (3)	1 (2)	1 (1)	1	14 (11)
45 - 49	2 (4)	5 (2)	3 (3)	1 (1)	1	1 (1)	13 (11)
50 - 54	(4)	3 (2)	3 (2)	1 (1)	1 (1)		8 (10)
55 - 59	(4)	1 (2)	2 (1)	1	1	1 (1)	6 (8)
60 - 64	1 (3)	(1)	1 (1)	1 (1)			3 (6)
TOTAL	13(26)	24(23)	38(28)	12(12)	8 (6)	5 (5)	100(100)

APPENDIX I

B. Correspondence of the female normative sample to 1960 census on age and education--figures given are number of subjects in each category, with corresponding census percentages (rounded) in parentheses

Age \ Education	5-8	8-11	12	13-15	16	17+	TOTAL
18 -19		(2)	3 (2)	1 (1)			4 (5)
20 -24	(1)	1 (3)	8 (6)	2 (2)	1		12 (12)
25 - 29	3 (1)	4 (2)	5 (5)	1 (1)	(1)	(1)	13 (11)
30 - 34	1 (2)	5 (3)	5 (5)	1 (1)	1 (1)		13 (12)
35 - 39	1 (2)	6 (3)	6 (6)	1 (1)	1 (1)	1	16 (13)
40 - 44	1 (3)	6 (3)	4 (4)	1 (1)	1 (1)		13 (12)
45 - 49	1 (3)	5 (2)	3 (3)	1 (1)	1	(1)	11 (10)
50 - 54	1 (3)	(2)	4 (2)	1 (1)	(1)	1	7 (9)
55 - 59	(4)	1 (2)	4 (2)	2 (1)	1		8 (9)
60 - 64	(4)	1 (1)	2 (1)	(1)			3 (7)
TOTAL	8(23)	29(23)	44(36)	11(11)	6 (5)	2 (2)	100(100)

APPENDIX II

A. Table for conversion of raw scores to T-scores of the Work Motivation Schedule, male form

Scale Raw Score	1	2	3	4	5	6	7	8	9	10
5							33			
6							35			14
7		36		15		26	37	30	32	16
8	31	37		17	25	28	39	31	34	19
9	32	38		19	26	29	41	33	35	21
10	33	40		21	28	31	42	34	36	23
11	34	41	33	22	30	32	44	36	38	25
12	35	43	33	24	31	34	46	37	39	27
13	36	44	34	26	33	35	48	39	41	29
14	38	45	35	28	35	36	50	40	42	31
15	39	47	36	29	36	38	52	42	44	33
16	40	48	37	31	38	39	54	44	45	35
17	41	50	38	33	40	41	56	45	46	37
18	42	51	39	35	41	42	58	47	48	40
19	43	52	39	36	43	44	60	48	49	42
20	44	54	40	38	45	45	62	50	51	44
21	45	55	41	40	46	46	64	51	52	46
22	46	57	42	42	48	48	66	53	53	48
23	48	58	43	43	50	49	67	54	55	50
24	49	60	44	45	51	51	69	56	56	52
25	50	61	44	47	53	52	71	58	58	54
26	51	62	45	48	55	54		59	59	56
27	52	64	46	50	56	55		61	60	58
28	53	65	47	52	58	56		62	62	61
29	54	67	48	54	60	58		64	63	63
30	55	68	49	55	61	59		65	65	65
31	56	69	50	57	63	61		67	66	67
32	58	71	50	59	65	62		68	67	69
33	59	72	51	61	66	64		70	69	71
34	60	74	52	62	68	65		71	70	73
35	61	75	53	64	69	67		73	72	75
36	62		54							77
37	63		55							79
38	64		56							82
39	65		56							84
40	66		57							86
41			58							88
42			59							90
43			60							92
44			61							94
45			61							96
46			62							98
47			63							101
48			64							103
49			65							105
50			66							107
51			67							
52			67							
53			68							
54			69							
55			70							

APPENDIX II

B. Table for conversion of raw scores to T-scores of the Work Motivation Schedule, female form

Scale Raw Score	1	2	3	4	5	6	7	8	9	10
3								14		
4								18		
5				22				22	26	
6				25			34	26	28	
7		32		27	27		35	31	30	20
8	26	34	38	29	29		37	35	32	21
9	28	35	39	31	30		38	39	35	23
10	29	37	40	33	31	35	40	43	37	25
11	30	38	42	35	33	36	41	47	39	26
12	31	40	43	37	34	37	43	51	42	28
13	32	41	44	39	35	38	45	56	44	29
14	33	43	45	42	37	39	46	60	46	31
15	34	44	47	44	38	41	48	64	48	33
16	35	46	48	46	39	42	49		51	34
17	37	48	49	48	40	43	51		53	36
18	38	49	50	50	42	44	53		55	37
19	39	51	52	52	43	45	54		57	39
20	40	52	53	54	44	46	56		60	41
21	41	54	54	56	46	47	57		62	42
22	42	55	55	59	47	48	59		64	44
23	43	57	57	61	48	49	60		66	46
24	45	58	58	63	50	50	62		69	47
25	46	60	59	65	51	52	64		71	49
26	47	61	60		52	53	65			50
27	48	63	62		54	54	67			52
28	49	64	63		55	55	68			54
29	50	66	64		56	56	70			55
30	51	67	65		58	57	71			57
31	52	69	67		59	58				58
32	54	70	68		60	59				60
33	55	72	69		61	60				62
34	56	73	71		63	61				63
35	57	75	72		64	63				65
36	58		73		65	64				
37	59		74		67	65				
38	60		76		68	66				
39	61		77		69	67				
40	63		78		71	68				
41						69				
42						70				
43						71				
44						72				
45						74				
46						75				
47						76				
48						77				
49						78				
50						79				

APPENDIX III

A. Rotated factor loadings (decimal points omitted) of items of Work Motivation Schedule on the 10 factors isolated in the analysis on the sample of men (N=200)

	1	2	3	4	5	6	7	8	9	10
(1) Altruism										
8. Work where you can be of help to another person	73	11	06	08	04	10	-12	17	24	0
19. Work in which you help people in trouble	86	11	13	-05	06	01	06	07	15	1
30. Work which helps people to lead happier lives	77	08	18	10	14	09	11	01	19	0
35. Work which will make life easier for others	76	11	14	15	03	08	-04	02	34	0
42. Work that helps those who can't help themselves	82	10	17	00	07	09	-05	-02	19	0
53. Work in which you relieve human suffering	79	09	29	13	07	-05	01	-08	16	0
57. Work in which you help the poor, sick and old	79	18	14	-02	04	-06	-06	00	21	0
65. Work in which you help people in distress	80	11	-02	-06	-05	00	04	09	07	0
(2) Art										
9. Work with beautiful objects	19	63	19	00	13	10	03	08	27	02
20. Work in which you are concerned with the beauty rather than the usefulness of what you make	11	60	15	-06	15	12	01	12	29	12
43. Work in which you can express your appreciation of what is beautiful in life	34	48	10	18	15	16	35	09	27	09
54. Work which helps others to appreciate beauty	42	60	10	20	03	12	19	03	17	10
66. Work in which the things you make are pleasing to the eye	19	65	01	03	-09	05	04	08	20	16
77. Work in which you can develop your talents along artistic lines	23	59	28	00	-03	11	08	04	16	00
88. Work in which you build something	01	47	13	01	-09	12	-08	15	-02	08
(3) Scientific inquiry										
2. Work in which you design new products	04	40	62	01	19	13	-06	16	07	09
10. Work which is concerned with developments in science	00	11	88	-07	07	04	-02	13	09	02
21. Work in which you help master the forces of nature	30	13	72	-02	12	07	-03	04	09	06

	1	2	3	4	5	6	7	8	9	10
44. Work where you are involved in practical applications of research	-06	00	71	15	01	15	09	09	03	-07
55. Work which would involve you in scientific research	-05	03	88	-05	08	02	-02	14	08	02
67. Work in which you help develop new scientific theories	15	16	79	02	02	03	03	16	11	05
79. Work in which you invent new things	15	31	70	07	23	11	-06	13	-01	14
81. Work in which you try to provide new contributions to knowledge	28	07	69	14	06	13	14	17	05	-09
85. Work that involves finding new knowledge about the world we live in	28	-01	67	09	14	11	21	05	11	04
87. Work where you make observations and reason about them to add to human knowledge	34	-04	64	19	10	08	13	13	17	-04
89. Work in which you find out "what makes things tick"	08	07	61	28	16	14	-05	25	-03	15
(4) Intellectual challenge										
3. Work where you are required to use your initiative	11	06	26	45	20	44	-07	26	-03	00
11. Work where you have the satisfaction of seeing a job through to the end	14	18	21	38	16	31	-18	38	08	09
22. Work where you are free to follow through on your own hunches	04	02	20	56	34	28	10	18	06	07
45. Work in which you can think for yourself	05	00	19	52	22	37	07	22	-06	03
56. Work in which you are encouraged to use your imagination	01	06	28	39	12	38	-03	37	01	-04
76. Work in which you figure out how to solve a problem	13	13	34	45	03	33	-09	31	-11	14
83. Work where you study and analyze problems	08	04	32	39	03	18	07	25	-19	-17
(5) Independence										
12. Work in which you can be independent of others in deciding what to do	08	-03	21	06	50	27	01	24	08	08
23. Work in which you are free to do what you want to do	02	-02	20	-13	60	16	13	30	18	02
31. Work you can do in your own way	08	03	21	18	70	22	10	25	10	05
36. Work in which you are free to guide your own affairs	09	-01	24	17	67	17	05	22	03	14
46. Work in which you budget your time in your own way	09	-03	03	14	50	33	03	29	04	03

		1	2	3	4	5	6	7	8	9	10
58.	Work in which you can get things done the way you want them	10	02	11	10	38	28	-06	31	25	20
69.	Work which allow you to set your own goals	04	19	04	12	43	23	23	29	06	11
84.	Work which you can plan for yourself	16	06	17	16	53	43	-03	22	06	09
(6)	Leadership										
13.	Work where you can be a leader	-06	13	12	11	16	76	18	09	-01	06
24.	Work where you can be the one in charge	-02	10	07	-09	23	80	02	07	-01	12
37.	Work where you can direct a whole project	01	18	16	11	19	78	-03	05	-02	07
47.	Work where you are in charge of carrying out a project	07	19	10	29	13	69	05	16	-09	07
59.	Work in which you can show leadership ability	13	01	04	13	-13	68	17	28	-16	-02
70.	Work where you have a chance to assume leadership	16	00	02	14	-08	68	19	22	-14	-10
86.	Work where you tell others how to do their work	00	09	00	00	18	72	-11	03	19	-15
(7)	Prestige										
4.	Work which gives you the chance to ge recognition	-01	02	14	24	00	42	44	23	13	06
14.	Work where you get to know influential people	10	09	19	-02	12	46	47	06	41	21
38.	Work where you can make a name for yourself	-03	06	20	04	13	43	43	15	20	17
48.	Work where you meet important people	03	10	17	-04	23	45	47	18	30	14
71.	Work in which you achieve social prestige	12	20	16	-09	15	31	51	01	27	17
(8)	Variety										
15.	Work where there is plenty of novelty and change	06	07	21	-01	25	07	07	59	13	04
26.	Work which is always changing	07	10	27	04	25	11	01	69	00	02
32.	Work which varies from day to day	-09	08	14	16	16	11	-04	69	-04	-04
39.	Work that's not routine	02	03	15	27	34	14	02	51	-05	-05
49.	Work in which everyday something exciting comes up	03	11	17	-04	16	15	06	77	03	09
61.	Work where each day is full of surprises	00	13	19	07	15	11	09	74	-01	05
72.	Work in which everyday something new comes up	05	08	04	13	03	19	10	72	-07	06

		1	2	3	4	5	6	7	8	9	10
(9)	Work conditions & associates										
18.	Work which doesn't put pressure on you	22	03	13	-18	06	-01	01	-05	66	15
27.	Work where you will be well liked	10	15	03	12	06	14	14	-01	60	17
29.	Work where you can avoid worries and pressures	16	04	09	-12	00	03	01	-09	71	13
33.	Work which you can do in a nice place	17	15	02	08	02	12	09	-05	72	06
50.	Work where attention is paid to your personal comfort	07	08	00	04	08	05	08	00	70	06
52.	Work that isn't fatiguing	12	12	14	-08	06	-10	04	-05	72	06
64.	Work where you can keep comfortable hours	14	03	08	-01	-07	-06	03	-04	68	21
(10)	Monetary rewards										
17.	Work which allows you to always have money saved "for a rainy day"	06	13	13	12	07	09	-02	-01	30	65
34.	Work that guarantees that you can stay out of debt	14	06	00	-02	18	06	01	-06	26	57
41.	Work in which you are never worried about money	08	05	14	05	09	10	00	07	36	59
51	Work that pays enough that you can afford a few luxuries	-03	06	-01	10	08	09	06	12	23	67
63.	Work in which you can make more money	09	11	03	-11	-03	20	12	09	25	66
74.	Work which gives you the money to buy anything you like--home, vacation, clothes	10	07	-07	-08	00	14	16	03	12	70

APPENDIX III

B. Rotated factor loadings (decimal points omitted) of items of Work Motivation Schedule on the 10 factors isolated in the analysis on the sample of women (N=200)

	1	2	3	4	5	6	7	8	9	10
(1) Altruism										
8. Work where you can be of help to another person	77	08	14	09	13	16	03	10	-07	06
19. Work in which you help people in trouble	82	09	26	-01	08	07	08	00	07	-03
30. Work which helps people lead happier lives	73	22	20	10	-02	06	02	09	04	09
35. Work which will make life easier for others	76	06	16	04	08	00	01	00	09	03
42. Work that helps those who can't help themselves	81	13	20	-07	00	05	10	01	04	04
53. Work in which you relieve human suffering	84	16	24	-01	04	03	-03	-01	01	-03
57. Work in which you help the poor, sick and old	80	10	25	-02	03	00	04	-01	05	-01
65. Work in which you help people in distress	56	11	16	-02	-01	07	05	-06	-02	-09
(2) Art										
1. Work that makes the world a more beautiful place	35	51	19	06	-14	00	05	-13	05	11
9. Work with beautiful objects	22	65	24	02	16	10	00	04	16	15
20. Work in which you are concerned with the beauty rather than the usefulness of what you make	02	62	13	-03	11	23	-03	06	06	-07
43. Work in which you can express your appreciation of what is beautiful in life	41	66	20	02	07	09	07	05	08	12
54. Work which helps others to appreciate beauty	37	70	12	05	-03	03	03	-04	06	03
66. Work in which the things you make are pleasing to the eye	15	41	22	-12	12	00	09	11	17	18
77. Work in which you can develop your talent along artistic lines	16	57	40	04	15	11	-01	02	04	04
(3) Scientific inquiry										
2. Work in which you design new products	18	25	64	-04	22	16	02	-21	08	14
6. Work in which you can develop skills	21	07	51	16	20	16	-04	06	-04	11
10. Work which concerned with developments in science	26	07	80	-04	02	13	07	05	-06	00
21. Work in which you help master the forces of nature	23	32	64	-08	01	11	10	-07	15	-02

		1	2	3	4	5	6	7	8	9	10
44.	Work where you are involved in practical applications of research	22	-03	68	20	04	21	10	04	-01	-05
55.	Work which would involve you in scientific research	14	01	78	-07	08	24	10	04	-02	04
67.	Work in which you help develop new scientific theories	21	09	71	-12	01	12	00	07	-05	-02
79.	Work in which you invent new things	13	31	71	05	16	26	12	-19	08	00
(4)	Intellectual challenge										
3.	Work where you are required to use your initiative	16	05	17	46	44	18	22	11	-26	05
11.	Work where you have the satisfaction of seeing a job through to the end	10	06	16	38	23	20	19	09	14	06
22.	Work where you are free to follow through on your own hunches	13	10	03	40	57	22	17	10	04	08
45.	Work in which you can think for yourself	21	07	10	47	48	16	21	04	-16	10
56.	Work in which you are encouraged to use your imagination	15	23	24	38	47	16	25	05	-14	06
(5)	Independence										
12.	Work in which you can be independent of others in deciding what to do	-02	04	09	09	55	30	07	00	06	11
23.	Work in which you are free to do what you want to do	-08	-04	11	-18	63	28	11	03	14	03
31.	Work you can do in your own way	03	08	10	01	66	18	02	22	-05	08
36.	Work in which you are free to guide your own affairs	-01	14	15	-04	72	17	00	21	03	00
46.	Work in which you budget your time in your own way	-06	-06	-01	05	59	19	13	-02	13	16
58.	Work in which you can get things done the way you want them	09	06	02	17	52	15	00	02	18	23
69.	Work which allows you to set your own goals	05	12	13	-05	56	19	12	-11	-02	18
(6)	Leadership-prestige										
4.	Work which gives you the chance to get recognition	03	08	11	01	13	64	16	12	-01	24
13.	Work where you can be a leader	08	-06	26	26	31	65	08	-13	-12	00
14.	Work where you get to know influential people	00	19	11	-10	18	60	07	09	21	22
37.	Work where you can direct a whole project	12	06	35	19	30	62	06	-08	-07	03

		1	2	3	4	5	6	7	8	9	10
38.	Work where you can make a name for yourself	06	11	22	-04	24	64	04	11	17	22
48.	Work where you meet important people	06	11	07	-20	19	66	24	15	03	19
59.	Work in which you can show leadership ability	08	-12	22	25	24	58	08	-04	-03	09
60.	Work in which you command the admiration of others	04	05	03	06	25	66	08	09	11	10
71.	Work in which you achieve social prestige	13	14	15	-13	16	53	17	06	13	31
86.	Work where you tell others how to do their work	10	11	20	15	25	60	18	-02	-05	01
(7)	Variety										
15.	Work where there is plenty of novelty and change	07	05	13	07	57	20	44	-01	20	14
26.	Work which is always changing	04	-05	16	14	56	18	51	-01	04	14
32.	Work which varies from day to day	02	-02	07	21	56	23	44	-09	15	23
49.	Work in which everyday something exciting comes up	11	03	11	01	30	21	68	04	05	13
61.	Work where each day is full of surprises	11	11	15	05	24	15	72	02	05	12
72.	Work in which everyday something new comes up	06	-07	15	07	18	20	70	04	-04	12
(8)	Appreciation-approval										
16.	Work where they appreciate what you do	07	-03	03	06	15	30	05	47	14	46
27.	Work where you will be well liked	17	11	01	10	12	26	08	48	19	35
40.	Work where you are treated in a kindly way	08	15	-07	17	06	-03	-07	52	25	48
(9)	Freedom from stress										
5.	Work where you don't have to be bothered with details and red tape	13	02	-04	-21	04	-02	06	07	50	09
18.	Work which doesn't put pressure on you	08	19	03	-04	00	02	-01	-11	72	30
29.	Work where you can avoid worries and pressures	05	18	04	10	05	-06	-15	10	66	36
52.	Work that isn't fatiguing	-11	03	01	00	10	15	-02	01	63	34
64.	Work where you can keep comfortable hours	-02	14	-06	01	15	11	06	-01	45	34
(10)	Monetary rewards										
17.	Work which allows you to always have money saved "for a rainy day"	01	02	10	12	09	07	03	02	13	80

		1	2	3	4	5	6	7	8	9	10
28.	Work where the salary goes up with the cost of living	-02	-06	07	09	08	07	05	03	17	78
34.	Work that guarantees that you can stay out of debt	-01	03	04	-01	18	03	05	05	14	63
41.	Work in which you are never worried about money	08	01	13	04	11	01	11	-02	18	70
51.	Work that pays enough that you can afford a few luxuries	-02	-01	05	-11	11	13	13	01	07	75
63.	Work in which you can make more money	-02	14	06	-12	03	25	05	-03	-05	67
74.	Work which gives you the money to buy anything you like --home, vacation, clothes	-13	08	00	-13	02	10	09	01	13	70

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APPENDIX IV

The Work Motivation Schedule

John F. Kinnane and Antanas Suziedelis

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Read each item with respect to its degree or importance to you in deciding about a job. Each item should be rated as "Extremely Important, Distinctly Important, Moderately Important, A Little Important, and Not At All Important". Please rate each item with a check mark at the right side of each page.

	Extremely Important	Distinctly Important	Moderately Important	A Little Important	Not At All Important
1. Work that makes the world a more beautiful place	____	____	____	____	____
2. Work in which you design new products	____	____	____	____	____
3. Work where you are required to use your initiative	____	____	____	____	____
4. Work which gives you the chance to get recognition	____	____	____	____	____
5. Work where you don't have to be bothered with details and red tape	____	____	____	____	____
6. Work in which you can develop skills and techniques	____	____	____	____	____
7. Work in a modern building setting	____	____	____	____	____
8. Work where you can be of help to another person	____	____	____	____	____
9. Work with beautiful objects	____	____	____	____	____
10. Work which is concerned with developments in science	____	____	____	____	____
11. Work where you have the satisfaction of seeing a job through to the end	____	____	____	____	____
12. Work in which you can be independent of others in deciding what to do	____	____	____	____	____
13. Work where you can be a leader	____	____	____	____	____
14. Work where you get to know influential people	____	____	____	____	____
15. Work where there is plenty of novelty and change	____	____	____	____	____
16. Work where they appreciate what you do	____	____	____	____	____
17. Work which allows you to always have money saved "for a rainy day"	____	____	____	____	____
18. Work which doesn't put pressure on you	____	____	____	____	____
19. Work in which you help people in trouble	____	____	____	____	____
20. Work in which you are concerned with the beauty rather than the usefulness of what you make	____	____	____	____	____

	Extremely Important	Distinctly Important	Moderately Important	A Little Important	Not At All Important
21. Work in which you help master the forces of nature	___	___	___	___	___
22. Work where you are free to follow through on your own hunches	___	___	___	___	___
23. Work in which you are free to do what you want to do	___	___	___	___	___
24. Work where you can be the one in charge	___	___	___	___	___
25. Work that makes people notice you	___	___	___	___	___
26. Work which is always changing	___	___	___	___	___
27. Work where you will be well liked	___	___	___	___	___
28. Work where the salary goes up with the cost of living	___	___	___	___	___
29. Work where you can avoid worries and pressures	___	___	___	___	___
30. Work which helps people lead a happier lives	___	___	___	___	___
31. Work you can do in your own way	___	___	___	___	___
32. Work which varies from day to day	___	___	___	___	___
33. Work which you can do in a nice place	___	___	___	___	___
34. Work that guarantees that you can stay out of debt	___	___	___	___	___
35. Work which will make life easier for others	___	___	___	___	___
36. Work in which you are free to guide your own affairs	___	___	___	___	___
37. Work where you can direct a whole project	___	___	___	___	___
38. Work where you can make a name for yourself	___	___	___	___	___
39. Work that's not routine	___	___	___	___	___
40. Work where you are treated in a kindly way	___	___	___	___	___
41. Work in which you are never worried about money	___	___	___	___	___
42. Work that helps those who can't help themselves	___	___	___	___	___
43. Work in which you can express your appreciation of what is beautiful in life	___	___	___	___	___
44. Work where you are involved in practical applications of research	___	___	___	___	___
45. Work in which you can think for yourself	___	___	___	___	___
46. Work in which you budget your time in your own way	___	___	___	___	___
47. Work in which you are in charge of carrying out a project	___	___	___	___	___

	Extremely Important	Distinctly Important	Moderately Important	A Little Important	Not At All Important
48. Work where you meet important people	___	___	___	___	___
49. Work in which everyday something exciting comes up	___	___	___	___	___
50. Work where attention is paid to your personal comfort	___	___	___	___	___
51. Work that pays enough that you can afford a few luxuries	___	___	___	___	___
52. Work that isn't fatiguing	___	___	___	___	___
53. Work in which you relieve human suffering	___	___	___	___	___
54. Work which helps others to appreciate beauty	___	___	___	___	___
55. Work which would involve you in scientific research	___	___	___	___	___
56. Work in which you are encouraged to use your imagination	___	___	___	___	___
57. Work in which you help the poor, sick and old	___	___	___	___	___
58. Work in which you can get things done the way you want them	___	___	___	___	___
59. Work in which you can show leadership ability	___	___	___	___	___
60. Work in which you command the admiration of others	___	___	___	___	___
61. Work where each day is full of surprises	___	___	___	___	___
62. Work where you can make the kind of friends you want	___	___	___	___	___
63. Work in which you can make more money	___	___	___	___	___
64. Work where you can keep comfortable hours	___	___	___	___	___
65. Work in which you help people in distress	___	___	___	___	___
66. Work in which the things you make are pleasing to the eye	___	___	___	___	___
67. Work in which you help develop new scientific theories	___	___	___	___	___
68. Work that is difficult	___	___	___	___	___
69. Work which allows you to set your own goals	___	___	___	___	___
70. Work where you have a chance to assume leadership	___	___	___	___	___
71. Work in which you achieve social prestige	___	___	___	___	___
72. Work in which everyday something new comes up	___	___	___	___	___
73. Work where you are not uncomfortable	___	___	___	___	___

	Extremely Important	Distinctly Important	Moderately Important	A Little Important	Not At All Important
74. Work which gives you the money to buy anything you like--home, vacation, clothes					
75. Work that gives you the amount of leisure time you desire					
76. Work in which you figure out how to solve a problem					
77. Work in which you can develop your talents along artistic lines					
78. Work in which you can always check with someone about how to do a job					
79. Work in which you invent new things					
80. Work where you are asked to do your job and no more					
81. Work in which you try to provide new contributions to knowledge					
82. Work that you can quit easily if you find you don't like it					
83. Work where you study and analyze problems					
84. Work which you can plan yourself					
85. Work that involves finding new knowledge about the world we live in					
86. Work where you tell others how to do their work					
87. Work where you make observations and reason about them to add to human knowledge					
88. Work in which you build something					
89. Work in which you find out "what makes things tick"					

APPENDIX V

Instructions for scoring the Work Motivation Schedule

To score the Schedule on each scale, responses of the subject on each item are given weights of 5, 4, 3, 2, or 1 corresponding to responses of "extremely important", "distinctly important", "moderately important", "a little important", "not at all important", respectively. The raw score for each scale is obtained by summing the weights of all items belonging in that scale.

Use Appendix III for the key to the item composition of each scale.

Tables in Appendix II may then be used for conversion of raw scores to T-scores.

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